REPORT RESUMES

ED 012 620 JC 670 312

AMPLIFIED TELEPHONE AS A TEACHING MEDIUM.

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REPORT NUMBER SC-EDUC-REP-1 PUB DATE MAR 65
EDRS PRICE MF-$0.50 HC-$3.80 95P.

DESCRIPTORS- *JUNIOR COLLEGES, *INSTRUCTIONAL MEDIA, *COOPERATIVE PROGRAMS, *TELEPHONE COMMUNICATION SYSTEMS, *INSTRUCTIONAL INNOVATION, INTERCOLLEGIATE PROGRAMS, CURRICULUM DEVELOPMENT, COLUMBIA

A GRANT TOTALING $58,400 FROM THE FUND FOR THE ADVANCEMENT OF EDUCATION ENABLED STEPHENS COLLEGE TO INITIATE AN EXPERIMENTAL EDUCATIONAL PROGRAM BY WHICH AMPLIFIED TELEPHONE COMMUNICATION BROUGHT HIGH-QUALITY INSTRUCTION TO GROUPS OF SMALL LIBERAL ARTS COLLEGES. A "MASTER TEACHER" ORGANIZED AND PRESENTED THE BASIC MATERIALS OF THE COURSE. PERSONS OF NATIONAL AND INTERNATIONAL REPUTATION SPOKE TO THE CLASSES VIA TELEPHONE CONFERENCE NETWORKS ON SUBJECTS RELEVANT TO THE COURSE WORK. A LOCAL COORDINATOR AND TECHNICAL DIRECTOR ON EACH CAMPUS WORKED ON THE PROJECT WITH THE COORDINATOR AT STEPHENS. A TEACHER AT EACH COLLEGE OR UNIVERSITY WAS PRESENT IN CLASS DURING THE LECTURES. ONE COURSE FOR FACULTY MEMBERS (A SEMINAR IN SCIENCE) AND TWO COURSES FOR STUDENTS (A COURSE IN CONTEMPORARY SOCIAL ISSUES AND A COURSE IN CONTEMPORARY LITERATURE) WERE ALL SUCCESSFUL IN SPITE OF SOME TECHNICAL PROBLEMS. THIS DOCUMENT (SECOND PRINTING) IS ALSO AVAILABLE FROM STEPHENS COLLEGE, COLUMBIA, MISSOURI 65201, FOR $1.00. (AD)

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Amplified Telephone as a Teaching Medium

Stephens College Educational Report: 1

JC 670 312

Stephens College Educational Report: I

Second Printing

Amplified Telephone as a Teaching Medium

Part One prepared by Mrs. Joan Jolly

Part Two prepared by Mr. Charles F. Madden

UNIVERSITY OF CALIF.
LOS ANGELES

MAY 1 1967

CLEARINGHOUSE FOR
JUNIOR COLLEGE
INFORMATION

Summary and final report on a series of inter-institutional instructional programs utilizing amplified telephone communication. Submitted to The Fund for the Advancement of Education by Stephens College, Columbia, Missouri, March 1965. Seymour A. Smith, President

Stephens College
Columbia, Missouri, U. S. A.

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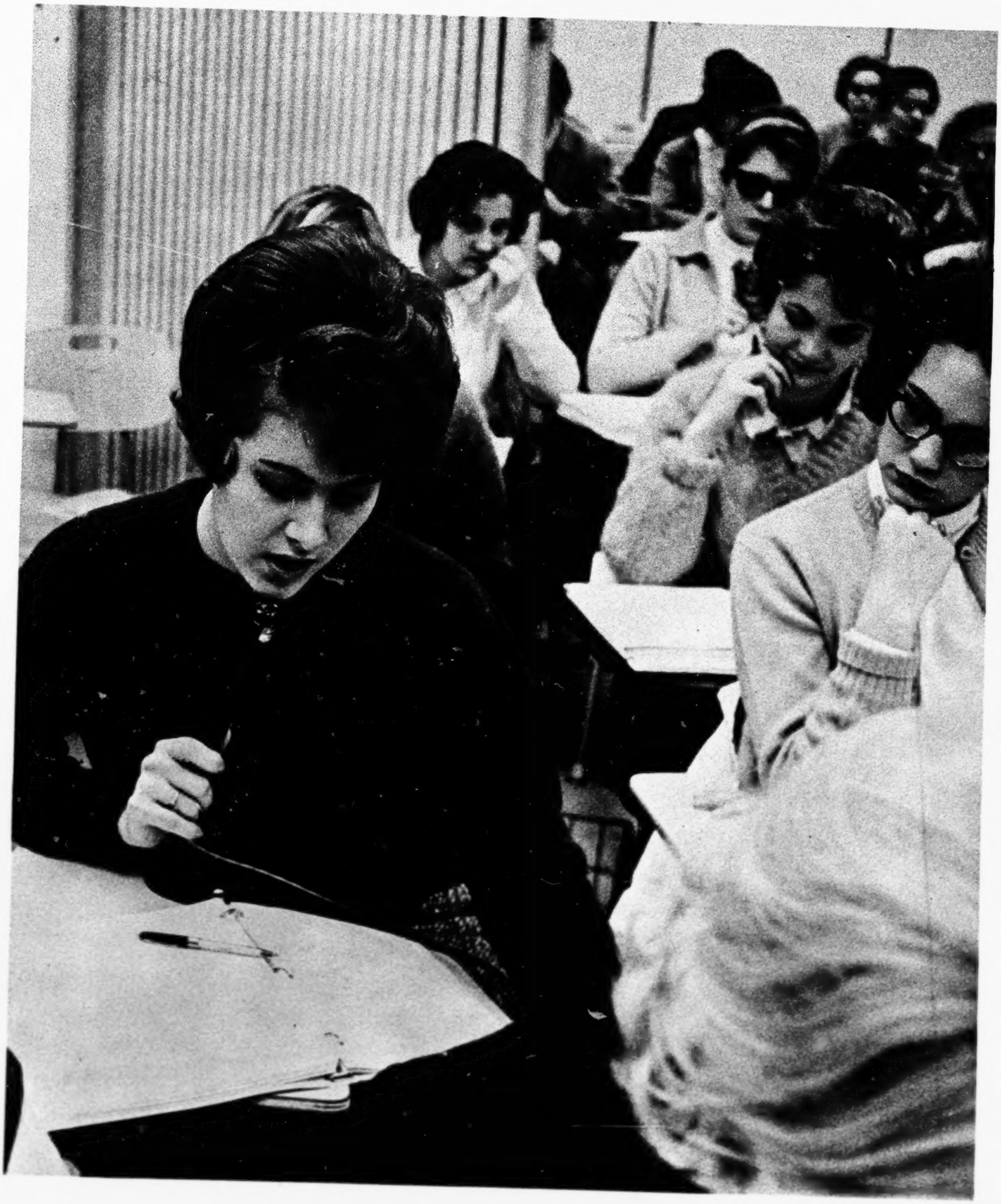
PART ONE

DESCRIPTION AND HISTORY



Chapter I
Amplified Telephone as a Teaching Medium

CHAPTER I

The tremendous increase in the use of educational media--especially the newest audio-visual devices--has been one of the greatest steps forward to aid education in this century. The conventional aids have increased in variety and application; such devices as closed and open circuit television have been introduced into the educational field; instructional materials have been produced on films, tapes, and slides; and media systems to provide the ultimate in usage have been developed, all intended to expand and increase the effectiveness of the teacher.

Despite such increased technological development one of the oldest audio aids has been, until recently, almost neglected in the educational field. Telephone communication has been developing steadily since its invention in 1876, but its use to bring far-flung experts into the college classrooms has not been fully realized--although such "conference calls" have been used in the business world.

The significance of amplified telephone conversations and interviews to bring experts in a variety of fields--science, politics, business, literature--into a classroom to provide immediacy to the study of those fields is just now being realized. Since 1958, classes at Stephens College, Columbia, Missouri, have been providing such conversations with distinguished scholars and leaders in actual classroom situations. During 1963-64 amplified telephone lectures were expanded to include a network of colleges and small universities in the South and Midwest in an effort to increase and add further interest and distinction to each institution's curricula.

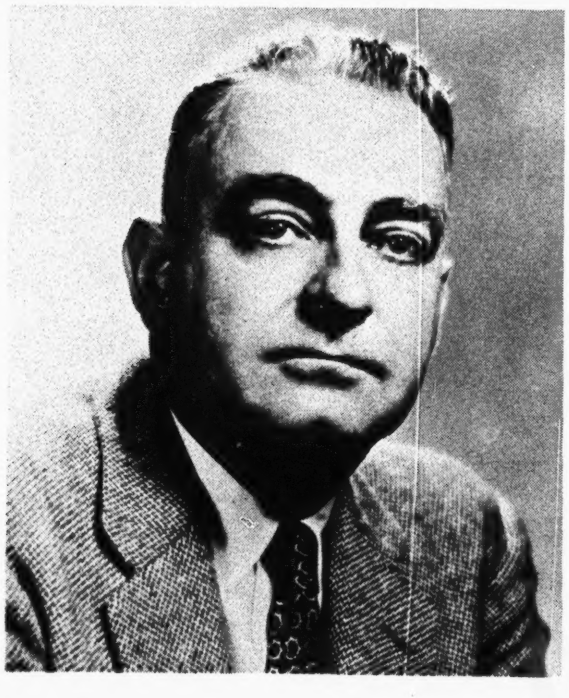
Stephens, a residential college for women founded in 1833, has long been known for its eagerness to experiment in bringing new methods and facilities to its students. The Amplified Telephone Project is one such experiment now being conducted at the College in connection with the advanced technology of the James Madison Wood Quadrangle. The five buildings which form this learning center are designed so as to incorporate an integrated communications system for the entire campus.

Since the first amplified telephone interviews were introduced in a political science course more than six years ago--to alert students to contemporary political events and life--Stephens has continuously used such calls as a part of the total study program in a variety of academic courses.

Dr. Alfred Novak conducts Amplified Telephone Seminar from Stephens College

Dr. Marjorie Carpenter converses with guests via Amplified Telephone in Great Issues course

Chapter II The Amplified Telephone Network 1963-64



Master teacher, Dr. Harry T. Moore, conducts Contemporary Writers course

CHAPTER II

On the evening of January 7, 1964, invited college and high school science teachers (plus a variety of other interested persons--teachers in other fields and guests including newspaper and broadcasting reporters) gathered in classrooms at seven colleges in the midwestern and southern parts of the United States to hear Nobel Prize winner Hermann Muller, professor at the University of Indiana, speak on "Genetic Aberrations." There were from 25 to 40 persons on each campus, participating, listening intently, asking questions as Dr. Muller, speaking from his home at Bloomington, Indiana, discussed his views on genetic selection.

Moderator and master teacher for the session--one of a series of thirteen--was Dr. Alfred Novak, chairman of the Stephens College Division of Sciences and Mathematics and consultant to the American Institute of Biological Sciences.

Dr. Muller's was the eleventh amplified telephone lecture in a special seminar series designed to increase the knowledge and effectiveness of science teachers by means of telephone conversations with experts in the scientific fields. The lecture was distributed to classrooms in divergent places by the essentially simple means of telephone lines.

The concepts of multiple classes on a single conference call grew from the original telephone conversations held for one course on the Stephens College campus in 1958.

The Science Seminar, conducted from Stephens College in the fall semester of 1963-64, was one of a series under-written by a grant from the Ford Foundation's Fund for the Advancement of Education for a project developing inter-institutional programs utilizing the amplified telephone method.

In 1962, Fund officials had approached Stephens College with a request to formulate a plan for such a telephone network to include small liberal arts colleges and universities, many of them predominantly Negro in enrollment, in order to bring to those colleges instruction at a level they could not otherwise afford. The cost of bringing such men as Dr. Muller and other Nobel scientists to each campus would be prohibitive, even if they were able to make that many separate appearances.

According to the Stephens proposal developed in cooperation with the Fund for the Advancement of Education, "This tapping of the resources of the wider community has proved to be a comparatively economical way of bringing to the campus otherwise unobtainable resources...The potentialities for utilizing these resources have barely been tapped...There need be no geographical restriction on where these classes are located."

Under the proposal to the Fund for the Advancement of Education, Stephens College was to organize and manage such courses and seminars presented. The plan included three pilot programs in differing fields, and with differing objectives, to show the adaptability of telephone communication for education.

Proposed and presented for the first semester of the 1963-64 academic year was the non-credit "Improvement of Science Teaching" seminar mentioned previously. Two other courses, granting three hours of college credit each, were planned and presented for the second semester of the same academic year. One, a social science-philosophy course, was "Great Issues in Contemporary Society"; the other, an interdisciplinary literature course known as "American Life as Seen by Contemporary Writers", was planned to supplement already available courses in Literature, English, the Humanities, or Philosophy.

With the grant, a total of $58,400 from the Fund for the Advancement of Education, Stephens College proceeded to organize and outline these courses and seminar, to enlist the aid of lecturers in the various fields, and set up the network between the colleges.

The eleven participating colleges in 1963-64, spread through eight states, were:

Stephens College, Columbia, Missouri (Sc, SS, Lit)*
Morehouse College, Atlanta, Georgia (Sc, Lit)
LeMoyne College, Memphis, Tennessee (Sc, SS)
Langston University, Langston, Oklahoma (Sc, Lit)
Drury College, Springfield, Missouri (Sc, Lit)
Wilberforce University, Wilberforce, Ohio (Sc, SS)
Kansas Wesleyan University, Salina, Kansas (Sc, SS)
Jackson State College, Jackson, Mississippi (Lit)
Tougaloo Southern Christian, Tougaloo, Mississippi (Lit)
Grambling College, Grambling, Louisiana (SS)
Southern University, Baton Rouge, Louisiana (SS)

Of the ten colleges participating (other than Stephens, which took part in all three) six were included in the Science Seminar the first semester and five in each of the two three-hour credit courses taught in the second academic semester. Although some of the ten colleges participated in both the Science and one of the other courses, no one of them offered both the Great Issues and the Contemporary Writers courses.

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* Sc indicates college took part in the Science Seminar;
SS indicates college took part in the Social Science Course;
Lit indicates college took part in the Literature course "ALSCW."

Charles Madden, academic coordinator, with students in Contemporary Writers cour

Chapter III

Equipment and Personnel

CHAPTER III

The transitory, but nevertheless effective, network of telephone communication used existing long distance lines to connect the campuses with the speaker and with each other. Thus the guest lecturer could impart information to several hundred students and teachers without ever leaving his office, laboratory, or home.

To insure clarity, special private telephone lines were installed, bypassing regular college switchboards; these were located at the points from which the lecturer spoke and in each classroom. The lecturer also was provided with a microphone-telephone headset for greater ease and freedom. This, coupled with microphones and amplification equipment in each of the participating classrooms, constituted all the necessary extras for a telephone lecture. All equipment was installed and serviced with the assistance and advice of the American Telephone and Telegraph Company and the General Telephone and Electronics Corporation.

To facilitate the best reception in the total campus-to-campus network, permanent amplification equipment and telephone lines were installed in the classrooms or lecture halls at each college. However, even this was relatively inexpensive when compared to the cost of bringing each of the speakers to each of the campuses.

Charles F. Madden, head of the English Department at Stephens College, and James A. Burkhart, of the Social Studies faculty at Stephens, coordinated the activities involved in such a telephone network. They worked with participating colleges and universities on matters of equipment, audio-visual materials, course outlines and descriptions, materials and reading lists for classroom use, and total plans for the three courses. Under the leadership of Dr. Seymour A. Smith, president of Stephens College, Mr. Madden served as coordinator of the amplified telephone project and Mr. Burkhart as the technical director.

On each campus a local coordinator and technical director were appointed to work with Stephens College on the project. Each of the three courses had a classroom teacher at each college or university in addition to the master teacher.

The Amplified Telephone Project for 1963-64 was planned in four phases beginning with the preliminary investigation and planning by Mr. Madden and Mr. Burkhart. This phase included the tentative outlining of content and structure for each course, compilation of lists of resource persons to be approached, outlining of technical facilities, and surveys and selection of participating institutions through correspondence, telephone communication, and personal visits by Mr. Madden and Mr. Burkhart to the various campuses.

Phase two involved the detailed course planning and scheduling, including the selection of a master teacher to coordinate each of the three projected courses; detailed development of the course syllabi or guide books, necessary materials, and bibliographies; and specific planning for evaluation of each course within the total project.

The third phase consisted of execution of the project--entailing day-to-day preparation needed within each course. Each college's local coordinator worked in close contact with Mr. Madden as general academic project coordinator. Mr. Burkhart, as technical director, worked with Neal Balanoff, head of the Audio-Visual department at Stephens, and with the technical directors on each campus. All of the Stephens leaders worked in unison with telephone company personnel for both long-lines transmissions and on-each-campus facilities. Finally, the master teacher for each of the three courses, who prepared institutions for the telephone lectures as well as the other weekly sessions, was named.

The third phase ended with the actual conduct of the three courses, which are described at greater length in Chapter IV of this report.

Phase four, the final step, was the collation of all facts about the project, the problems encountered, the evaluations by the participants, and a judgment of the probable usefulness of the plan for other groups or institutions. As part of this final phase, Mr. Madden has prepared a detailed evaluation for the Fund for the Advancement of Education. This evaluation constitutes Part Two of this report.

Ralph McGill, publisher of Atlanta Constitution

Dr. Peter Medawar of British National Institute

Chapter IV
Courses Offered 1963-64

Author John Dos Passos

CHAPTER IV

Science

Designed as a in-service training program for college science teachers, the seminar called "The Improvement of Science Teaching" was a non-credit course coordinated from the Stephens campus with six other colleges in the network participating. Dr. Alfred Novak was the master teacher. In this role he arranged for and introduced the speakers at each of the thirteen weekly sessions. Following each speaker's lecture (lasting approximately 30 to 45 minutes) he asked for questions from the individual colleges, led discussions, and summarized. The "students" actually were college science and mathematics teachers in the participating institutions. At the same time, the institutions invited to their campuses science and mathematics faculty members at other nearby colleges--and at selected nearby high schools--to participate in the seminars. The result was that on the seven campuses nearly forty-five educational institutions were represented.

Guest lecturers for the Science Seminar included three Nobel Prize winners: Dr. George Beadle, University of Chicago, who spoke on the "Molecular Basis of Heredity"; Dr. Hermann Muller, University of Indiana, on "Genetic Aberrations"; and Dr. Peter B. Medawar, British National Institute for Medical Research, on "The Future of Man."

The list of outstanding speakers and their subjects also included:

Dr. John G. Kemeny, Dartmouth College, "The Role of Mathematics in Science."

Dr. Joseph J. Schwab, University of Chicago, "Scientific Inquiry."

Dr. Earl A. Evans, Jr., University of Chicago, "How Life Began, Biological Organization."

Dr. Alfred Novak, Stephens College, "Problems of Multicellularity."

Dr. Irwin Sizer, Massachusetts Institute of Technology, "Protein Architecture, Enzymatic Systems."

Dr. Herbert Goldberg, University of Missouri, "Competitive Molecules--Antimetabolites."

Dr. Harry Sisler, University of Florida, "Chemical Bonds and Organic Molecules."

Dr. James Bonner, California Institute of Technology, "Nuclear Organizations."

Dr. Philip Siekevitz, Rockefeller Institute, "Cellular Dynamics."

A structured discussion for each lecture session was set up by Dr. Novak, varying the schedule so participating colleges rotated positions in the question periods. Time was allowed for free discussion with the lecturer and "students" in the classroom network. In addition Dr. Novak provided a summary for each session and an extra course-summary session the week after the final lecture. (See Appendix V for a sample structured session.)

In a letter to Dr. Novak after his long-distance lecture-discussion, Dr. Bonner stated: "I thought the telephone session was a marvelous success...In approximately a little less than two hours time we were able to talk to, and I hope, transmit some information to, an audience which if personally visited, group by group, would have taken me a week or two to do. Keep it up."

In another letter, Dr. Harry Sisler commented: "I believe that this new technique has some real possibilities in providing opportunities for widespread communication with small college campuses at relatively small cost."

Literature

Chosen master teacher for the three hour credit course "American Life as Seen by Contemporary Writers" was Dr. Harry T. Moore, Research Professor of English at Southern Illinois University, Carbondale, Illinois, who taught the course from his home at Carterville, Illinois, near Carbondale. He was selected not only as an educator but also as an outstanding American writer, editor, and literary critic. The fact that he was not on campus at Stephens merely added another "leg" to the conference call network and provided no additional technical problems.

Offered three times a week to students in six colleges, all meeting on their individual campuses at 10 a.m. CST each Monday, Wednesday, and Friday, this class was organized by its master teacher, Dr. Moore, and the Stephens classroom teacher, Mr. Madden. It included a brief historical survey of twentieth century American literature, but predominantly considered contemporary writing.

Since it met three times weekly, the classwork was broken into units so that each local college teacher lectured and held discussions on Wednesdays.

Mondays and Fridays were designated as "telephone lecture days." Once a week on telephone lecture days, Dr. Moore introduced a guest writer or critic speaking for approximately twenty minutes; then discussions and questions from all colleges and universities were directed to the guest for his on-the-spot answers during the remainder of the 50-minute class period. Dr. Moore also led the classes on the other weekly telephone lecture day. Advance study was extensive since students read at length from the individual author's work before the lectures, each week being devoted to the work of a single author. A schedule, reading list, and other materials were supplied to each college from the academic coordinator's office at Stephens.

Author John Dos Passos was the first contemporary writer to lecture on the telephone network; speaking with students and Dr. Moore from Baltimore, Maryland, Mr. Dos Passos discussed his book Mid-Century and answered such questions as whether or not he thinks "individualism is a lost cause in America today." His reply (to the student's question from Drury College):

no; we have not completely adjusted to a complicated world, but individualism is not a lost cause.

Answering a question from a student at Tougaloo Southern Christian College ("Why did you choose labor unions as the theme of that book?"), he replied that at that point he was interested in the question of unions, their leaders and the rank and file members; they grew as a force in his novel as the book was written, he added, almost parenthetically.

Following him in February came such off-campus lecturers as poet-critic Horace Gregory, editor of The Portable Sherwood Anderson, speaking from New York City on Anderson's works; critic Arthur Mizener, professor of English at Cornell University, who spoke from Ithaca, N.Y., on F. Scott Fitzgerald's Tender is the Night; literary critic and author of two Faulkner criticisms Carvel Collins, professor of English at Massachusetts Institute of Technology, who spoke from Cambridge, Mass., on the works of Faulkner with special attention to Three Famous Short Novels.

During the semester, the classes also talked with Carlos Baker, Woodrow Wilson Professor of English at Princeton University, speaking from Princeton, N. J., on the works of Ernest Hemingway; Warren Beck, Lawrence College, speaking on John Steinbeck's The Grapes of Wrath; and James T. Farrell in conversation about his own third volume of Studs Lonigan, Judgment Day. (A complete list of all guest lecturers is in the Appendix VII.)

Social Science - Philosophy

Dr. Marjorie Carpenter, a member of the Humanities faculty at Stephens College, was selected as master teacher for the other three-hour credit course offered during the spring semester, "Great Issues in Contemporary Society." Former chairman of the Stephens Humanities department and co-author of The Larger Learning, Dr. Carpenter organized the course around such topics as the population explosion, rising nationalism and racism, the problems of increasing technology and automation, the needs of education, and the instability of morality.

In a preface to the materials distributed to all the participating institutions and students, Dr. Carpenter described her central theme in this way: "We think of a current issue as one in which problems have arisen which impinge on our consciousness to such an extent that we recognize the importance of trying to see the cause of the conflict and of opposing views...we need to encourage ourselves to make some judgment as to the most creative step forward, in so far as we can see it.

"Over all of these is one major question for each student," Dr. Carpenter pointed out. "It is this: Is it possible today for the individual to feel in control of his own life?"

As a partial text, Dr. Carpenter used Max Lerner's book American Civilization. Dr. Lerner was himself one of the off-campus telephone lecturers in May, discussing his views on "The Age of Overkill."

Other guest telephone lecturers ranged widely, including: Miss Margaret Mead, anthropologist, author, and social critic, speaking from her office at the American Museum of Natural History in New York City on "What is a culture?/ What is a Civilization?"; Adolf Berle, attorney, writer, and former ambassador and State Department official, also from New York City, speaking on "The Responsibility of Free Enterprise"; John Kenneth Galbraith, former U. S. Ambassador to India, presently teaching at Harvard University, speaking from Cambridge, Mass., discussing "The Politics of Privation"; Dr. Huston Smith, philosopher and professor at Massachusetts Institute of Technology, also speaking from Cambridge, on "Ethical Relativism"; Nobel Peace Prize winner Ralph Bunche, speaking from his United Nations office on "The United Nations in 1964." (A complete listing of lecturers, subjects, and dates is in Appendix VI.)

Miss Mead's lecture prompted questions as usual in these courses:

"As an anthropologist, do you always evaluate foreign civilizations in terms of our own?" (from a student at Southern University).

Miss Mead: "No. Anthropologists are trained not to evaluate other civilizations in terms of their own...We can make the distinction between a society that is technologically complicated or technologically simple; a society that emphasizes the arts or one that does not...but...we are treating each society as a whole."

From a student at Grambling College: "...What is causing the rejection of domestic aid by some countries from other countries? Are these political problems or cultural problems?"

Miss Mead: "I think these are mainly political, although sometimes it is very old countries where a new part of the population is rising to power...The old holders of power want to reject aid from other countries because they are afraid that it will undermine their power...But I would say these are more questions of power and relative allegiance to one political block or another... than they are questions of culture as such."

The class was organized much like the Contemporary Writers course in that there was at least one lecture each week by an off-campus authority, with Dr. Carpenter as master teacher leading structured discussion at the other two class periods.

Advantages

"Without the telephone facilities provided in this experiment," commented Mr. Madden, "it is highly unlikely that any student--or teacher--would in his lifetime have an opportunity to discuss person-to-person the major ideas of such a distinguished company.

"There are few opportunities for any of us to talk directly and informally with persons whose actions and ideas are shaping our world: winners of Nobel

Prizes or Pulitzer Prizes, officials or analysts of the political scene, or writers and thinkers of extraordinary merit. This project has made the ideal possible."

The Fund for the Advancement of Education was especially interested in the telephone lectures as originated at Stephens and used by ten other colleges and universities. Dr. Alvin C. Eurich, vice-president of the Fund, commented: "Such a technique makes available some of the finest teaching personnel to institutions which would normally be limited in attracting to their campus such distinguished leadership." Referring to both master teachers as well as guest lecturers, he commented further that "the development of amplified telephone networks has great potential for more effective and efficient use of our best college and university teachers in the future. This will be essential as mounting enrollment pressures put heavier and heavier demands upon available teaching personnel."

Costs

Expenses involved in the 1963-64 experimental telephone lecture series fall into several categories.

During this period telephonic equipment was leased to the schools in the network by local telephone companies. Although local or regional companies installed and leased the equipment to the institutions, all used the same devices developed by the Bell Telephone System. Costs came to approximately $40 per month per school, after the initial installation cost of $25 per school.

For this series of calls, arrangements also were made to have telephone operators' head-sets in the home or office from which each guest spoke; costs for these amounted to from $5 to $15 depending upon local situations.

Long distance charges for each complete conference call, which averaged 45 minutes, ranged from $120 to $225 in the continental United States. The trans-Atlantic call to Dr. Medawar in London totaled $450.

Honoraria for guest speakers were budgeted at $100 each.

All of these costs were paid by Stephens College from the grant funds supplied by the F.A.E.

Each of the colleges and universities arranged for and provided its own local classroom teacher and technical personnel without compensation from the Fund or Stephens.

James Burkhart, technical director, with American Government class

Chapter V

Stephens' Early Use of Amplified Telephone

CHAPTER V

The original telephone lectures and conversations were conceived at Stephens College by James A. Burkhart, member of the Social Studies faculty, who was seeking a way to bring contemporary government and politics into the classroom. Encouraged by Stephens President Smith, Mr. Burkhart put his idea into effect in 1958-59--bringing into his classroom by long-distance telephone calls the people who could explain how and why American politics work.

Students in his American Government course interviewed (during the first year's experimentation with long distance calls) such leaders as then attorney general of Missouri John M. Dalton; Norman Cousins of the Saturday Review; Harold Stassen; Sen. Robert Taft; Arkansas Gov. Orval Faubus; Democratic and Republican national chairmen; state labor and business leaders; the women in state politics. From these guests government students developed more immediate awareness of contemporary problems, began to understand how the formal class material was related to the world in which they lived, and developed increased enthusiasm about their regular course work.

Students prepared in depth for each interview--gathering background and biographical material on each interviewee, preparing questions, and discussing and reading works by the guest lecturers. The interest of such knowledgeable persons--and their availability to speak to Mr. Burkhart's classes--was shown by the fact that 98 per cent readily agreed to the telephone interviews in advance correspondence. In each letter Mr. Burkhart asked if the recipient would participate--for approximately 20 to 40 minutes--in question-and-answer sessions in his special field of interest. At those early sessions in 1958 the guests were not asked to deliver formal opening lectures. After a brief "warm up" conversation of three minutes or so and then general comments from the day's guest, students were free to ask questions for comments or answers by the speaker.

Help for that first series of calls in 1958 came from two off-campus sources:

A small grant ($300) from the Citizenship Clearing House, a national organization promoting political participation and awareness among college students, helped to pay some costs and provide encouragement.

Technical equipment and assistance was provided by the General Telephone Company of Missouri, which furnished and installed in the room used by the American Government class (1) a telephone connected to the college's switchboard, (2) the same telephone connected to a sensitive microphone placed on a table in the center of the room to pick up each student's voice from where she sat in the classroom, and (3) an amplifier and loudspeaker.

The microphone fed students' questions into the long distance telephone connection; the amplifier and loud speaker took the person's voice from the telephone line and "broadcast" it through the loudspeaker to the entire class. Much the same system, with certain refinements, is used in the larger network of the 1963-64 telephone courses.

Desiring to broaden and further test the applicability and effectiveness of such a telephone interview program, Stephens applied to the United States Office of Education in 1959-60 for a grant to conduct a year-long research and testing program. A $16,000 grant from the U. S. Department of Health, Education, and Welfare in May, 1959, provided funds under which a control system of identical classes with and without telephone lectures was established for the 1959-60 academic year.

The plan for the experiment called for four different Stephens College courses--American Government (a survey of local, state, and national institutions), Principles and Problems of Modern Business (an orientation to the world of business), Basic Beliefs in Human Experience (a course emphasizing fundamental philosophical concepts), Masterpieces of World Literature (an individualized reading course)--to be taught by regular methods with the addition of bi-weekly telephone interviews with significant national figures or eminent persons in each of these fields.

Each of these sections was balanced, or controlled, by another section taught in the same manner as before, without the addition of the telephone conversations. In order to make some judgment of the significance of the interviews, students in both groups were given pre and post tests on content and attitudes. Mr. Burkhart compiled an extensive study incorporating the planning for the experiment, the information and insight gained, and the tabulated results from testing and interviewing of students in both the telephone and control classes.

In brief, the study showed that the telephonic classes made the students more aware of people, problems, and possible actions to be taken in the field involved; that the telephone interviews provided added interest and stimulation and broadened the students' outlooks; and encouraged them to read and examine their own ideas and attitudes.

When asked what they considered the "best features" of amplified telephone courses, students replied that (1) personal contact with public figures was most helpful in remembering facts about the subject matter; (2) the person interviewed built up class interest; (3) the interviews increased their awareness and made them more inclined to read and discuss the topics outside of class.

In general, the teachers involved with the telephone classes were pleased with their experiences in using the amplified telephone technique as a teaching resource. All felt the device added another dimension to the learning process, and expressed hopes of continuing the use of long-distance telephone interviews in succeeding years.

Certain problems were mentioned by the faculty in connection with using such a teaching device. First, they pointed out, classroom interviews are not self-operating and the burden of teaching does not automatically pass to the outside expert. If anything, the use of classroom interviews requires more careful preparation and greater skill in execution on the part of the instructor.

The second problem mentioned was the considerable administrative work connected with arranging interviews and working them into the normal class schedule.

Thirdly, the telephone technique is more readily adaptable to certain academic areas than to others. In the political science, business, and philosophy courses, administration and scheduling were easier to manage than in such a course as Masterpieces of World Literature in which students usually met in small conference groups rather than in larger groups for lectures.

(These problems--though significant--were overcome in the 1963-64 telephone network project by close cooperation of the master teacher and academic coordinator. Usually the master teacher arranged for the total list of lecturers and the scheduling. The academic coordinator worked with him on administrative problems.)

Under the four-class project for the U. S. Office of Education, the faculty member in charge of each class usually planned for and arranged the list of speakers and the interview schedule.

In Masterpieces of World Literature, for example, the teacher was John H. Thompson of the Stephens Literature faculty. He arranged interviews with contemporary authors who were publishing currently and critics who were intimately acquainted with authors and their works. Thus a call was set up to John Malcolm Brinnin at Cambridge, Mass., on November 10, 1959, during the week in which his book The Third Rose: Gertrude Stein and Her World was published. A conversation with Richard Ellman of Northwestern University concerned his newly published biography of James Joyce, which later won for him the National Book Award.

Others interviewed in the Masterpieces class ranged from novelist Katherine Ann Porter in Washington, D.C., to poet John Ciardi in New Jersey. An interview with author-playwright-critic Budd Schulberg at Princeton, N.J., became so interesting that it had to be continued and concluded at the next class period two days later.

In the Business Education course, taught by Kermit Crawley of the Stephens Business Education faculty, such persons as Alice K. Leopold, Assistant to the Secretary of Labor in Washington, D.C.; economist Dexter Keezer, vice president and director of the economics department of McGraw-Hill Book Company, Inc., in New York City; and Mary Roebling, member of the Board of Directors of the American Stock Exchange, were interviewed.

Philosophy students in their Basic Beliefs course, taught by B. L. Osborne of the Stephens Religion and Philosophy faculty, took part in a three-way interview--speaking to Dr. Jaroslav Pelikan, professor of historical theology at the University of Chicago from his campus; the Rev. Walter Ong, S.J., St. Louis University faculty member; and, in Columbia, Dr. Lewis Spitz, then associate professor of history at the University of Missouri. This developed into an open-end theological discussion lasting more than half an hour. They also used the telephone for a not-so-long distance when they spoke to Rabbi Abraham Pimontel, director of the local Hillel Foundation, as he was preparing for Yom Kippur services.

In American Government, Mr. Burkhart's students participated in conversations with a wide variety of persons in political life, including socialist Norman Thomas in New York City, Gov. Edmund Brown of California speaking from Sacramento, Connecticut Congressman Chester Bowles speaking from Washington, D.C., and Governor Mark Hatfield of Oregon speaking from Salem. The interviewees included Republicans and Democrats and both local and national leaders. After Premier Khrushchev's visit to Roswell Garst on his farm near Coon Rapids, Iowa, students interviewed the American farmer for 41 minutes, getting his views on the Russian premier as well as his views on the news coverage of the Premier's trip.

In December of 1959, Mr. Burkhart programmed a three-way conference call whereby his class heard the publisher of the St. Louis Globe-Democrat, Richard Amberg, debate the question of wire-tapping with Tom Eagleton who was then the Circuit Attorney for the city of St. Louis (and is presently Missouri's Attorney General).

At the instigation of Mr. Burkhart in the spring of 1962, two other institutions--the University of Omaha and Drury College--participated with Stephens in interviewing Margaret Mead. This led to still another three-way call on March 19, 1962, when Stephens and the University of Omaha interviewed Pierre Salinger on the role and responsibilities of his position as presidential press secretary.

Cost of early projects

The major costs of originating and producing such a project as the four-course telephone lectures in 1959-60 involved the installation and servicing of equipment. Once that large outlay was made, the subsequent costs for the long distance calls were relatively small, especially when compared with the cost of bringing such guests on the campus--travel, lecture fees, accommodations, etc.

The total for installation and servicing of the telephone equipment--the telephone itself, its connection, the microphones, the amplifiers, and the loudspeakers for the four classrooms came to $2,142.85 in 1959-60.

Faculty salaries for those developing the telephone lectures in their classes were not included in computing the cost; long distance telephone tolls for the 1959-60 four course experiment with telephonic classes amounted to no more than $1200.

During that same year honoraria for interviews were budgeted at $25 for each person interviewed.

Lecturers in 1963-64 show range of possibilities in using amplified telephone . . .

Dr. George Beadle

Dr. Philip Siekevitz

Dr. Hermann Muller

Barbara Ward, Lady Jackson

Dr. Ralph Bunche

Dr. Margaret Mead

Dr. John Kenneth Galbraith

Chapter VI

A Projection: Future Uses

Saul Bellow

Vance Bourjaily

Dr. Adrienne Koch

James T. Farrell

CHAPTER VI

The adaptability of person to person--and person to group--teaching in the form of long distance telephone conversations and lectures was proven technically and academically feasible through the pilot program in 1963-64 at Stephens and ten other institutions on the telephonic network.

Projection and plans for future use of such telephone lectures are being discussed--both for long and short distances.

For example: Stephens College is using long distance telephone lectures in its own faculty-advising seminars, inviting specialists in the field of teacher-student relationships to confer with faculty members who act as advisers to students during the college year. Recently Professor Abraham Maslow, Chairman of the Department of Psychology, Brandeis University, Waltham, Mass., conversed via long distance from his home at Waltham with Stephens faculty members, discussing "Beyond the Feminine Mystique."

Also at Stephens, telephone lectures were used when alumnae met in the spring for Alumnae College (a two-day conference in which alumnae and their husbands returned to the campus for discussions on "The Arts: Search for Meaning," led by outstanding alumnae and faculty members). Art historian Mrs. John Dillenberger of the San Francisco Museum of Art and poet Louise Bogan of the New Yorker magazine joined the discussions by way of long distance calls.

For shorter distance telephone teaching, a design for a future "dial-a-lesson" system has been incorporated into the communications systems of Stephens College's new learning center whereby a student will be able to enter a study carrel and "dial" a lesson in a foreign language or hear a class lecture she has missed or wants to study in depth.

Projected future usage of amplified telephone conversations also include the areas of university extension work, alumnae relations, and institutional development programs.

For example: the in-service training of teachers could be enriched and broadened by setting up telephone lecture centers in various areas of a state where teachers would hear and question university professors. Thus they would be able to update their teacher-training without the time and expense necessary to attend additional sessions.

In the field of alumnae relations, clubs and organizations far removed from the colleges could keep in close contact with college personnel, thus enabling their members to know personally the latest developments at their own alma maters.

Institutional development directors could set up interviews between college personnel and interested persons off campus, and by using the long-distance telephone technique develop person-to-person and person-to-group conversation at a saving of both time and expense.

PART TWO

SUMMARY AND FINAL REPORT

Stephens College technician, Oral Kuehn, checks equipment before amplified telephone lecture at the College

Chapter I
Development

Dr. E. G. McCurtain, Drury College, makes initial connection for telelecture

CHAPTER I

At the suggestion of the Fund for the Advancement of Education, Stephens College in the spring of 1963 presented a proposal for an extensive program of inter-institutional instruction using amplified telephone. An initial grant of $47,500 was made by the Fund and later, as the program grew, this was supplemented by an additional $10,900.

The program as presented was an effort to bring outstanding instruction to a group of small, liberal arts colleges with special attention to those predominantly Negro in enrollment. The instruction was to be considered in two ways: 1) a "master teacher" was to organize and present the basic materials of the course and 2) persons of national and international reputation were to speak to the classes via telephone conference networks on subjects relevant to the course work.

Three courses were projected. The first, a seminar in science, was to be directed toward faculty members; the other two, a course in contemporary social issues and a course in contemporary literature, were to be made available to students.

Central coordination was essential. Stephens College appointed Charles F. Madden, Head of the English Department, to act as academic coordinator and James A. Burkhart, Professor of American Government and a pioneer in instruction by telephone, to act as technical coordinator. Many other persons from the college were involved in the day to day operation of the project.

Stephens faculty members James Burkhart and Charles Madden work with Don Phillips of General Telephone Company in setting up telephone network

Chapter II
Planning

CHAPTER II

Most of the planning for the project was carried out during the summer of 1963 and the early weeks of the fall term. The details of the plans are included in Part I of this report which was published by the college as a progress report in brochure form in the spring of 1964. Copies have been made generally available through the Stephens College Office of Educational Development.

Participating Institutions. A primary task was the identification of participating institutions. During one planning session some basic criteria were identified. There was a consensus among project personnel that the cooperating schools, 1) should indicate an interest in the project, 2) should be aware of their own deficiencies and the need for improvement, 3) should indicate a willingness to see the project as a part of a continuing pattern of improvement, 4) should be within a reasonable radius of Stephens College, and 5) should be predominantly Negro.

Working with these items a number of schools within a 300 mile radius of Columbia, Missouri, were identified. During this process we began to receive requests from schools which had heard about the project from various sources and wanted to be a part of the experiment. These requests took us outside of the arbitrarily set 300 mile radius but gave added force to our number one criterion: interest. On this basis we included Langston University, Wilberforce University and Morehouse College.

Toward the end of the summer, when a pilot project in Jackson, Mississippi, was being terminated, the request came to include the schools from that project in our experiment. The four schools involved were Jackson State College, Jackson, Mississippi; Tougaloo Southern Christian College, Tougaloo, Mississippi; Grambling College, Grambling, Louisiana; and Southern University, Baton Rouge, Louisiana. The limitations of the equipment and the increased number of institutions brought a revision of plans and prompted the request for additional funds.

Stephens revised the structure of the project. Instead of offering three courses to a network of seven colleges, we decided to offer the three courses to three overlapping networks involving eleven colleges. The final determination as to which schools would participate in each of the courses was made by the coordinator in order to keep the networks in balance; seven institutions were involved in the science seminar and six in each of the other courses. Stephens College was the only institution involved in all three offerings.

In the planning stages it was determined that all expenses for the project, with the exception of salary for the campus teacher, would be paid from the Foundation grant. To facilitate this, all charges by the telephone companies involved were made directly to the coordinator. This included charges for installation and leasing of the KS 19134 conference set (installation costs varied from location to location but were approximately $25.00 each; leasing also varied somewhat but ran approximately $40.00 per month per set); the local service charge; the cumulative toll charges (a sample list and summary of toll charges is included as Appendix IX of this report); and the charges for installation at the home or office of the guest speaker. Since the conference equipment was continuously available to the institutions participating in the project, it was agreed that each institution might use the equipment for any additional tele-lectures but that all toll charges for such use would be made to the institution.

Since the science seminar was scheduled for the first semester of 1963-64 the plans for that course were given first priority. In order to reach as many faculty members as possible each of the participating schools was asked to invite interested professional persons from neighboring colleges or high schools. A final tabulation showed that the lectures reached representatives of over 40 institutions. A list of those which participated is included as Appendix X of this report.

Master Teachers. For the development of the projected courses Stephens College identified three master teachers, one for each of the courses being offered. Two of the teachers were from the Stephens faculty; Dr. Marjorie Carpenter and Dr. Alfred Novak; the third was selected from the faculty of the University of Southern Illinois at Carbondale, Dr. Harry T. Moore. Each of these teachers is outstanding in his field. Their qualifications are detailed in brief biographies which are included in Appendix II of this report. Their most important qualification, however, was their readiness to participate in a new educational venture and to share their insights, both into subject matter and pedagogy, with teachers and students of other institutions. Each teacher was told that his methods should reflect his own best judgment regarding instruction in his discipline.

Since each course took a somewhat different approach the master teachers worked in different ways.

Dr. Novak's course, the science seminar, met in the evening and for an hour and a half. He asked his guest lecturers to speak for 40-45 minutes before introducing the question period. Although Dr. Novak gave one lecture himself, he was primarily a moderator for the faculty group.

Dr. Carpenter's course, Great Issues in Contemporary Society, was a regular part of the curriculum of the six schools involved. It met on Monday, Wednesday and Friday from 11:00 - 11:50 CST. Dr. Carpenter developed a syllabus for her course which included readings from the text, Max Lerner's America As a Civilization, and selected readings from articles or books by the guest lecturer. Dr. Carpenter's syllabus was, by far, the most complex because of the wide diversity of the speakers and the subjects they covered. Dr. Carpenter's plan called for only one conference call each week but detailed very carefully the activities of the class during the other two days. In actual practice a number of calls were made which involved just the colleges and no guest lecturers. On several of these the students from one of the participating institutions made panel presentations or raised questions with students from the other colleges. Her plan was distinguished by flexibility.

Dr. Moore's class was patterned for two telephone sessions each week and one "campus day." Part of this organization was determined by Dr. Moore's other commitments and part by the logic of the subject matter. Dr. Moore lectured one day each week on the book and author under study and in the second telephone session moderated the conversation with the author or critic. Wednesday of each week was left open for activities determined by the classroom teacher. No effort was made by the "master teacher" to structure this period. The exceptions to this statement were the three examinations scheduled for the course.

Lecturers. Each of the "master teachers" determined, on the basis of his course organization, those lecturers to be included as a part of his class. In the Science Seminar and Great Issues in Contemporary Society willingness to participate and availability were the only limiting factors. In American Life as Seen by Contemporary Writers Dr. Moore established one other limitation: a major work of the author had to be available in paperback edition since the book cost was an item in the participating schools.

There were no major difficulties in securing the lecturers. The planning committee at Stephens had set a standard honorarium of $100.00 and all lecturers were offered this amount. Three speakers questioned this figure and in order to secure these particular figures an adjustment to $150.00 was made. The matter of honorarium for this kind of presentation is vague and it is our feeling that standardization is necessary.

Nearly all of the initial overtures to the lecturers were made by telephone. This method gives the coordinator, or teacher, the opportunity to hear the telephone voice of the lecturer and to explain in some detail the procedures involved.

Although the telephone was used for some of the second and third contacts most of this follow-up work was carried on through correspondence.

Each lecturer was asked to provide a recent photograph, a telephone number from which he would speak and biographical data. The photographs were copied and slides prepared for each of the participating institutions. The biographical data was multilithed and distributed to each of the students in each of the institutions. These sheets are a part of the syllabi included with these reports. Blue paper was used for these so that they would be readily identified in the syllabus by the students.

We provided each lecturer with a 4 x 6 card carrying all the relevant information about the schools to which he would be speaking. With this handy reference he could call each teacher by name and knew immediately the geographical location of each institution. A sample card is included with the syllabus for each course.

The attitude of the lecturers was interesting. Some who do not regularly appear before student groups were skeptical and hesitant. Reassured that the procedure was, indeed, a successful way of communicating with a large, widely scattered audience they invariably enjoyed the experience and frequently ask that we call again if the program were to be continued. The single exception was the first lecturer in the first series. In spite of great effort by all concerned the telephone connection was extremely poor and the session was disappointing. When asked to repeat his lecture the speaker declined saying that he had "been hanged once."

Complete lists of the lecturers appear as Appendices IV, VI and VII in this report and in each syllabus.

Campus Visits. During the experimental year Mr. Madden and Mr. Burkhart or Miss Carpenter visited each of the participating institutions (with the exception of Wilberforce University) to review with the personnel the technical and academic problems of the project. In almost every instance the visitors were able to sit in on a tele-lecture and to observe, first-hand, the physical setting and academic milieu.

At several colleges we were able to make suggestions for improving the telephone reception. At Kansas Wesleyan, for example, the small auditorium seemed a more suitable room than the many windowed reading room where the science seminar was held; we, therefore, encouraged a new installation in the auditorium.

But the more important results of the visits were in the realm of interpersonal relations. We became more than disembodied voices or impersonal directives and were able to sense the needs and ambitions of the involved institutions. The project faculty members in each college were those with lively minds and a willingness to explore new ideas and techniques. Many of them made suggestions which will strengthen telephone courses in the future. All of them urged more and more inter-institutional activity.

Publicity. In the planning of the tele-lecture series one of the most important aspects was adequate publicity. The knowledge that this experiment was a break-through in education utilizing a new technique was important in gaining wide-spread acceptance of the procedure. If our experiment was to demonstrate the feasibility of the method, news of it had to be spread abroad.

Mr. Harold Rubin, Director of the Office of Public Information at Stephens, assumed major responsibility for this aspect of the program and was so successful that his efforts on behalf of this project won for him the accolades of his professional colleagues. He and his office were given the National Honors Competition Certificate of Special Merit by the American College Public Relations Association for their publicity program in behalf of the tele-lecture program.

Though there are no statistics on the number of stories used by magazines and newspapers, the collected clippings are impressively bound in a volume and inquiries resulting from them show that interest in the project is world wide.

One article by the coordinator of the project appeared in the July 18, 1964, issue of Saturday Review; a reprint of that article is included as the final Appendix of this report.

Technical Aspects of the Program. Although Stephens College had had considerable experience with the educational use of amplified telephone, there had been only occasional use of the conference network. It was, therefore, tremendously important that the college seek the advice of consultants from the telephone industry. In this regard both the American Telephone and Telegraph Company and the General Telephone Company of Missouri were extremely helpful. Mr. Mike Beilis from the New York office of A T & T came to the campus for a day and helped to establish certain procedures which were useful throughout the project. Mr. Don Philiips of the General Telephone Company of Missouri and Mr. Harold Brady and Mr. Don Fitzgerald of A T & T in St. Louis were continuously and conscientiously involved throughout the project. It was decided that all colleges involved would use the KS 19134 tele-lecture conference set and that, in order to test the effectiveness of that equipment, no additions would be made to it and it would not be connected by any existing amplification systems.

Stephens College leased two of these sets from the telephone company and, as part of the project, agreed to pay for installation and leasing at each of the other ten locations. At Stephens College installations were made in four classrooms to allow flexibility in scheduling and in the anticipated size of the audiences. Acoustics in these locations were carefully checked and adjustments made in furnishings and wall treatment to provide the best possible sound situation. All of this was carried out under Mr. Burkhart's supervision.

In order to cover the unexpected at the sending end of the guest lecture series, in consultation with Harold Brady of the St. Louis office of A T & T, we decided to install a private line for each lecturer and to equip that line with an operator's headset so that the speaker would be free to use his hands during the conversation. Though Dr. Moore used such an instrument quite successfully throughout his course, we discovered that it created difficulty for some of the speakers. We changed the order to provide a shoulder rest on a regular desk-type telephone. At the conclusion of the project we became convinced that while this separate line with a special instrument provided a kind of insurance in our extensive program, it would not be necessary in most tele-lecture series. The recommended installation would be, simply, a private line.

To reduce the possibility of technical errors the telephone company provided a step-by-step guide sheet for both guest lecturer and the operator of the KS 19134. In each of the colleges either a student or a member of the audio-visual department was assigned as operator of the conference set. It was generally agreed that in the complex program we had established, the classroom teacher could not be expected to perform a technician's duties.

Since the Science Seminar was the first course offered in the inter-institutional network most of the technical difficulties with this method of instruction were encountered during this period and most were resolved satisfactorily. Although the Bell System and the General Telephone Company were extremely cooperative the major weaknesses in the Science program were mechanical.

For the first program from Hanover, New Hampshire, the lecture by Dr. Kemeny, a piece of equipment was installed with the private line and headset which caused considerable interference and made the lecture almost completely incomprehensible. The telephone company checked through the system, discovered the error and made an adjustment in toll charges; but the psychological damage to the participants was almost irreparable.

Within a few sessions, as reported, we made the decision to switch to a phone with a shoulder rest and to avoid the headset. This change seemed to make the speakers feel more at ease.

Certain line annoyances were never overcome. There seems, under our present system, no way to avoid the sensation of "ringing" -- similar to the sound heard when a number is dialed -- on the line. Another disadvantage of the system is the lack of suitable ways of attracting the attention of the operator if something goes wrong with the connection. In our project our operators found it necessary to "monitor" the calls almost continuously.

Some difficulties were encountered, which while "technical" in one description, could be ascribed primarily to insufficiently trained personnel in the classrooms. We frequently encountered the "squeals" of feedback; since all the lines were bridged into the network, the noise of one was transmitted to all. On visits to the campuses Mr. Burkhart and Mr. Madden were able to clarify some procedural matters in the operation of equipment which helped to stabilize the technical side of the program.

We learned that perhaps the most important aspect of the program, technically speaking, is to ascertain at the very beginning of each session that the technicians have achieved the best possible connection. At that time, while the operator is in touch with each station, and before formal presentations have begun, one can ask to have new lines tried or new bridges made and the quality of the reception can be vastly improved.

There is a psychological dimension to this kind of program. Most people are conditioned to think of long distance telephoning as expensive, and many hesitate to think of any conversation lasting more than three minutes. With this frame of reference, they are willing to accept any connection and want to begin the session immediately. Our experience showed that five or ten minutes of informal dialogue among the participants, during which difficulties can be spotted, will usually assure them of a more satisfactory session.

Chapter III
The Courses

Serving as technical adviser for the science seminar on his campus is Dr. E. G. McCurtain of Drury

Wilberforce University faculty members plan for amplified telephone lectures. They are, left to right: Prof. James R. Davis, Dean Milton S. J. Wright, and Dr. Deckard Ritter.

DNA
T= thymine
A = Adenine
C = Cytosine
G = Guanine
A T
T
C
G

CHAPTER III

Science Seminar. Those institutions participating in the Science Seminar were: Drury College, Springfield, Missouri (Dr. S. D. Larson); Kansas Wesleyan University, Salina, Kansas (Mr. Charles Creager); Langston University, Langston, Oklahoma (Mr. James A. Simpson); Le Moyne College, Memphis, Tennessee (Dr. W. W. Gibson); Morehouse College, Atlanta, Georgia (Dr. H. C. McBay); Wilberforce University, Wilberforce, Ohio (Prof. E. L. Harris); and Stephens College (Dr. Alfred Novak).

There were thirteen sessions in the Science Seminar under the direction of Dr. Alfred Novak. The class met from October 1, 1963, through February 4, 1964. The sessions were held on Tuesday evenings at 7:00 p.m. CST.

During the opening session initiating the project there were greetings to the participants from President Seymour A. Smith of Stephens College and Dr. Alvin C. Eurich, Vice-President of the Fund for the Advancement of Education, both of whom were in New York City.

The lecturers in this series covered a wide range of scientific materials from the opening address by John G. Kemeny on "The Role of Mathematics in Science" to a profusely (and beautifully) illustrated lecture on "Cellular Dynamics" by Dr. Philip Siekevitz. Most of the material was descriptive of recent investigations being carried on by the speakers themselves and was, therefore, timely, interesting and, sometimes, provocative. Those who attended the seminar were particularly interested in the contradictory points of view expressed by the two Nobel prize winning geneticists Hermann Muller and Peter Medawar when discussing the future of man.

Dr. Novak conducted two complete sessions. During the first he presented a paper on "The Problems of Multicellularity" and during the second he moderated the verbal evaluation of the tele-lecture course.

During the Science Seminar we initiated the procedures of "Structured Discussion." To avoid confusion during the question period, we issued from the coordinator's office a time schedule for each session. This sheet contained a listing of the order in which questions would be accepted from the participating institutions. The institutions were "rotated" so that each had, at some point, the first question in one of the sessions. This proved so successful that it was made a regular procedure in each tele-lecture course. Only occasionally did we schedule "free discussion." For those occasions we asked simply that the speaker identify himself and get a "go ahead" from the moderator. The teacher of the course moderated each session.

Since this course was for teachers there were no examinations or papers to be written. After each session the coordinator and the technician were asked to submit evaluation forms indicating, on the one hand, a response to the subject matter and, on the other, a description of the technical reception. These forms provided a running critique of both aspects of the program and many subtle changes were introduced as a result of responses recorded here. We were also able through these evaluation forms to gather evidence on the number of participants and the schools they represented.

An evaluation session was scheduled by telephone on January 21, 1964. The conclusions expressed on that occasion are included in the next section of this report.

Great Issues of Contemporary Society. Those institutions participating in this course were: Grambling College, Grambling, Louisiana (Dr. W. A. McCree); Le Moyne College, Memphis, Tennessee (Dr. Clifton H. Johnson); Kansas Wesleyan University, Salina, Kansas (Dr. Thomas Durkin); Southern University, Baton Rouge, Louisiana (Dr. Henry E. Cobb); Wilberforce University, Wilbrforce, Ohio (Rev. James Davis) and Stephens College, Columbia, Missouri (Dr. Marjorie Carpenter, the "master teacher," and Miss Elisabeth Barnes).

There were 46 class meetings scheduled in this course; 20 used amplified telephone for instruction and 15 involved guest speakers. The class met regularly from 11:00 - 12:00 a.m. CST on Mondays, Wednesdays and Fridays from January 29, 1964, to May 22, 1964.

Dr. Carpenter devised the syllabus for this course, and an examination of it will disclose several interesting features. Following the pattern of the Science Seminar the syllabus includes brief biographical sketches of each of the guest speakers (blue paper) and class schedules (green paper) showing the pattern of the structured discussions (or variants of the discussion method). Dr. Carpenter has also included fairly extensive readings, assignments for reading in the text (America As A Civilization, Lerner), and references to periodicals containing relevant materials. Some visual materials suggested by the speakers have also been made a part of the syllabus.

The lecturers were dynamic and, fortunately, in treating their wide range of topics they assumed positions which were clear and provocative. Although all were distinctly "liberal" in their socio-political outlooks they presented the issues under discussion with commendable objectivity. There was unexpected unanimity among the speakers at several junctures of the course. Probably the most shocking to the students was the suggestion that in the world of the not-to-distant future we shall have to radically shift our notions relative to economic structure, political structure, social structure, and even our value structure. Almost without exception the speakers said that education was the major force in preparing for the new frames of reference which they predicted.

Dr. Carpenter prepared two examinations during the semester. The examinations were administered by the campus teachers and graded on each campus. There was no effort to conduct comparative studies of student accomplishments. Dr. Carpenter asked for representative responses to various questions from the participating institutions but these were used for structuring course content rather than for evaluation. Some response to the course reported by the campus teachers has been included in the next section of this report.

American Life as Seen by Contemporary Writers. Those institutions participating in this course were: Drury College, Springfield, Missouri (Dr. James Livingston); Jackson State College, Jackson, Mississippi (Dr. R. H. Jefferson); Langston University, Langston, Oklahoma (Mrs. Moxye King); Morehouse College, Atlanta, Georgia (Dr. Finley Campbell); Tougaloo Southern Christian College, Tougaloo, Mississippi (Dr. Elizabeth Sewell) and Stephens College (Charles F. Madden). The "master teacher," Dr. Harry T. Moore, taught from the study of his home in Carterville, Illinois, and never appeared in any of the classrooms.

There were 47 class meetings scheduled in the course. Dr. Moore lectured by telephone 15 times and conducted 17 interviews with guest authors. The class met regularly from 10:00 - 11:00 CST on Mondays, Wednesdays and Fridays from January 29, 1964, to May 22, 1964.

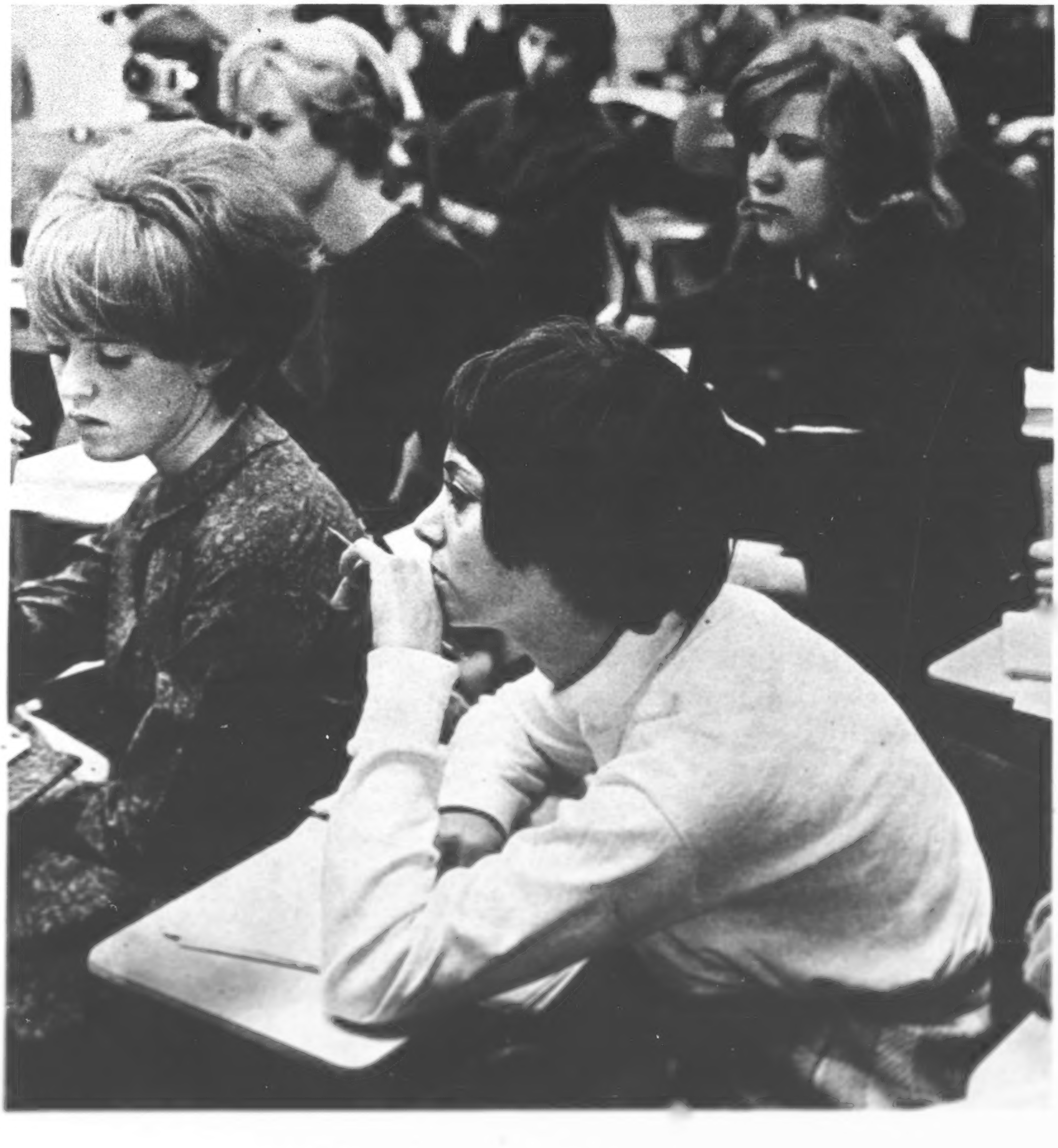
The syllabus for this course was much simpler in structure than those prepared for either of the other offerings. Biographical and bibliographical sheets for each guest speaker were prepared by Mrs. Bertrice Bartlett of the Stephens College library staff. A single sheet showing the plan for structured discussion was issued at the beginning of the course and followed throughout. During the unit on contemporary poetry groups of poems were multilithed and distributed from the coordinator's office to all students registered for the course. Examinations were prepared by Dr. Moore on three occasions during the course. These are included in the copy of the syllabus attached to the report. The examinations were administered and graded by the campus teachers. On all but the first examination the campus teachers were given the option of adding elements to the examination to cover materials to which they had given emphasis. To provide a view of campus response to the examinations each teacher was asked--on the first examination--to indicate the range of his grades and to send sample papers for an informal comparison by the coordinator. No effort was made to conduct comparative studies of institutional accomplishments.

The lecturers in this course were frank and open in the discussion of their literary works. They provided, in addition to individual insight, some valuable commentary on the techniques of writing, the limitations of criticism and the function of the artist in our society. The critics spoke, generally, longer than either the novelists or poets and most of them spoke from manuscripts or extensive notes. As background for the writers themselves, the critics were tremendously valuable. Each writer spoke for a few minutes (5 - 10) before entertaining questions from the students. The question periods were lively. The questions showed that the students had read with care and concern. Nearly every speaker commended--either directly or tangentially--the quality of the questions. During the poetry unit questions were limited to a single poem during each "round" of the colleges. The discussion was thus focused and relevant.

On the final day of the course an evaluation was carried on by telephone. This was structured by a number of questions suggested by the coordinator. Some results of this session are included in the next section of the report.

Chapter IV
Evaluations

Stephens students listen intently to amplified lecture emanating from the Stephens campus



CHAPTER IV

The evaluation of such an extensive project must, of necessity, contain comments on many different facets of the program. It can be said, without qualification, that the program was highly successful. The three courses demonstrated that even for different kinds of subjects and for teachers using various instructional methods, the telephone, amplified and provided with additional microphones, can be an effective way of carrying on inter-institutional programs.

Some of the technical difficulties of such a program have already been discussed in this report. The most persistent difficulty, however, can be traced to the personnel. Speakers must be briefed on the use of the telephone--the necessity for speaking distinctly and slowly. Those using the conference set must learn the operation so that the directional microphones function as designed and so that the circuit noise is kept to a minimum.

The use of the conference hook-up made it possible for speakers to reach audiences spread geographically throughout the eastern half of the United States. The system made available to eleven small, liberal arts colleges a schedule of guest lecturers that would have been impossible in the budget of any single institution. The project suggested to the participating schools the feasibility of regional networks where faculty of one institution might be shared by neighboring ones. The administrative officers of each institution have expressed considerable interest in adapting the technique to other institutional ventures.

The value of any educational experiment should be measured by the responses of the students. Throughout the three programs described in this report we sought evaluation materials from the teachers or moderators or technicians. As a final session in each course we sought student responses. In several instances the teachers of the courses have summarized responses from their classes. Those included below are typical.

SCIENCE SEMINAR: "First, I would like to compliment you on your choice of speakers. I believe one of the major products of the series was the opportunity that our undergraduates had to encounter some of the most outstanding modern biologists in what was really an almost face to face situation. The situation was very exciting and dynamic because we knew that we *could* ask questions of these people if we wanted."

Kansas Wesleyan

"For me this has been 'Operation Up-date'. I was especially appreciative of the talks given by Dr. Bonner and Dr. Siekevitz. On the whole the level was quite good. I think the mid-session question period was a great benefit in bringing the speaker to the level of the audience--whether he needed to come up or down . . . . . I've been particularly impressed with the in-the-room feeling that I've had. I've felt as if the speaker were sitting on the platform with Dr. Novak. It has been wonderful."

Christian College

GREAT ISSUES OF CONTEMPORARY SOCIETY: "The choice of speakers was excellent. Each was an outstanding scholar, and each was on the frontier of his particular field of endeavor. Our college certainly would not have had the opportunity to hear such outstanding speakers during the school year without the tele-course. This is probably the most important feature of the tele-lecture arrangement. Individual teachers, however well-meaning, can not reproduce the authoritative lectures given by persons who are significantly involved in contemporary problems on a day to day basis.

The course provided an inter-disciplinary approach to contemporary problems and forced the student to draw together various bits of isolated knowledge in an effort to solve important problems. It made the student attempt to reconcile the methodology of various disciplines.

My basic recommendation is that the course should be offered again. Some revisions may be necessary, but the tremendous educational opportunities of such an experiment far outweigh the few problems."

James L. Davis
Wilberforce University

AMERICAN LIFE AS SEEN BY CONTEMPORARY WRITERS: "There is no doubt the course has been a success here at Tougaloo, in fact, we had an almost indecently good time with it. One student said, 'I have enjoyed this course as much as, if not more than, any course I have ever taken.'"

"There was a balance in this course between a critical approach and an imaginative understanding of the creators' side of things--this is unusual and, I think, immensely valuable."

"The course material connected directly with our daily lives. I feel sure we should be engagé and the course gave one the opportunity to see how we could be."

"The course gave us all a sense of the great web of relationship between literature and life."

Elizabeth Sewell
Tougaloo Southern Christian

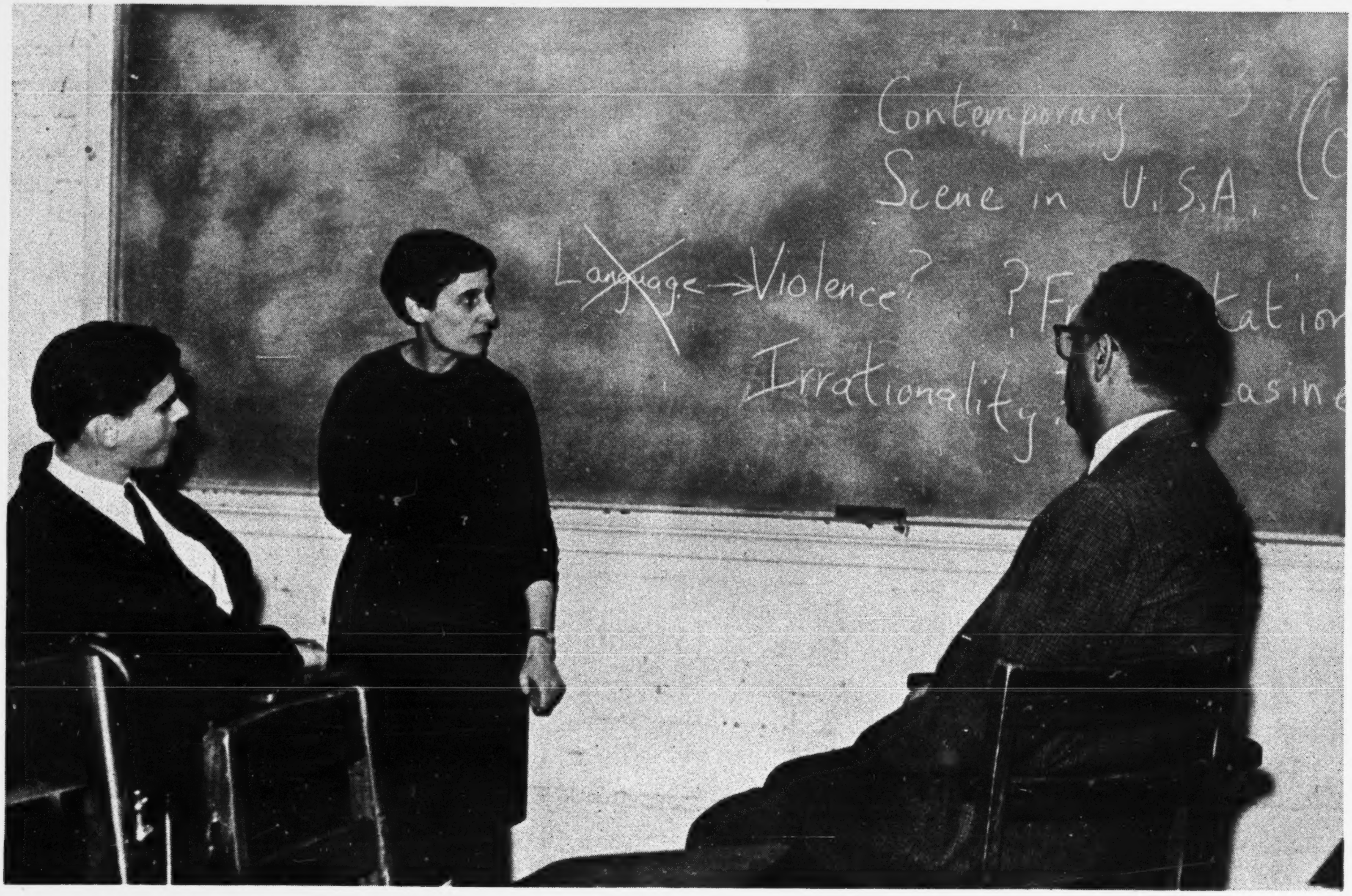
Perhaps the greatest assurance of the effectiveness of the program came from the eagerness with which every participant sought to continue with us in some such cooperative venture. The coordinator of this project has worked out a sample financial plan showing basic costs for an inter-institutional program and is sharing this with those who are interested in continuing the tele-lecture and supporting it through regular budgeting procedures.

C

Chapter V

A Brief Guide To Telelecture Planning

Planning for telelecture courses at Tougaloo Southern Christian College are, left to right: Prof. P. William Hutchinson, Dr. Elizabeth Sewell, and technical director William I. Townsend.


Contemporary
Scene in U.S.A.
Language → Violence?
Irrationality

CHAPTER V

Many college and university administrators have been interested in establishing programs within the curricula involving the tele-lecture method. The key to a good tele-lecture series is detailed planning and a concern for communicating the plans to all participants. To aid in the process we have outlined the major steps involved. The steps are generally indicated by questions which must be answered. Many of these could be answered in a single session involving an Academic Dean, a bursar, a Director of Audio-visual, a Director of Public Relations, and concerned faculty.

STEP ONE: Before establishing a tele-lecture program any institution should answer basic questions: What is the educational goal we hope to achieve? For what group of students and/or teachers is the program to be designed? The answers may vary, but unless the educational goal is clear no institution should venture into such a program.

STEP TWO: Such programs require much time, effort and money in both planning and execution. Who is to be responsible for the program? What portion of his time is to be allotted to it? What sort of recompense will be made to him? Can the institution support the program financially? Could it be supported by cooperative effort? Would governmental or foundation support be possible?

STEP THREE: Each institution should determine whether the goal decided upon is highly individual or whether there would be value in considering an inter-institutional network. If the program is to be inter-institutional, is it to be regional, national, or some combination? What other schools or colleges would likely be involved?

STEP FOUR: Does the college or university currently have facilities which can be used for such a program? What will be the expected demand in this area? (Are audio-visual materials and personnel available, for example? Secretarial help?)

STEP FIVE: What kind of equipment will we need? Involve your local telephone company. The marketing and sales representative probably will be the individual with the most ready information about installation and costs. With his help demonstrations of various types of equipment may be possible.

STEP SIX: Will the program involve only personnel from your campus or will you be using guest lecturers? What provisions will be made for paying those who teach the courses or who give lectures? We have tried to establish a fee of $100.00 for an hour-long tele-lecture.

What criteria will be used in determining the participants? Will this be an administrative decision, or a decision made by the faculty member teaching the course or a cooperative decision of all persons involved?

STEP SEVEN: In making the initial overtures to the lecturers it is best to use the telephone if they can be reached in this way. (It is difficult for one to say that he never uses the telephone if he is doing it at that moment and if you can reassure him that he sounds fine!) The first contact should be made a month to six weeks before the expected lecture (this will vary depending on the program). It is important to explain the educational value of this technique, clarify your purposes and explain as precisely as possible what the lecturer is to do.

STEP EIGHT: Be prepared to ask the lecturer for all relevant materials in order to avoid frequent interruptions of his time between the initial overture and the tele-lecture. You should determine as early as possible the telephone number from which he will speak. Photographs or biographical materials should also be sought with ample time to allow for duplication or other uses.

STEP NINE: Before the program is to get underway, you should ask that the telephone company provide a test call linking all participants but the guest lecturer. This will give the telephone company and the operators an opportunity to check the time necessary for making the connections and the quality which they can hope to achieve.

STEP TEN: All guest lecturers should be reminded by telephone or letter a few days before the actual tele-lecture. This is a good time to recheck the matter of time (particularly if you are crossing time zones), and to advise the lecturer on last minute matters of importance.

STEP ELEVEN: A prompt letter to participants or a telephone call after the tele-lecture is often of value in reassuring the lecturer of his success. This makes him more available to others who seek his cooperation.

Part Three

Appendices

Part One

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Students at LeMoyne College talk with Dr. Margaret Mead

Morehouse College students participate in Science Seminar

Appendix I

Stephens College

Founded in 1833, Stephens College, Columbia, Missouri, is a private, residential college for women--and one of the oldest colleges for women in the United States.

Originally called the Columbia Female Academy, Stephens opened its first year with a limited enrollment of 25 girls, which grew to the present enrollment of approximately 1700, including students from all fifty states and more than a dozen foreign countries each year.

In 1870, the Honorable J. L. Stephens, a Columbia businessman, created an endowment for the college, and the name was changed to Stephens College in his honor. The modern era of the College began in 1912 with the selection of James Madison Wood as President.

Continuing to develop a program to fit the needs and interests of women, the present administration under the leadership of Dr. Seymour A. Smith (who became president in 1958) encourages faculty members to experiment with and evolve new ideas in instruction--such as the telephone lecture series--to expand the educational resources of the College.

The College offers three degrees: The Associate in Arts degree, given upon the successful completion of two years of study; the Bachelor of Fine Arts degree, inaugurated in 1960, awarded in the fields of Music, Dance, Theatre Arts, and Fashion; and the Bachelor of Arts degree, begun in 1964, designed so a student can pursue special areas of concentration in an individualized liberal arts program.

Administration

President	Dr. Seymour A. Smith
Academic Vice-President and Dean of Instruction	Dr. James G. Rice
Academic Division Chairmen	
Division of the Arts	Dr. Carl Melvin Davidson, Jr.
Division of Home and Community	Dr. Mary Lou Purcell
Division of Language, Literature and Philosophy	Dr. Edwin S. Miller
Division of Sciences and Mathematics	Dr. Alfred Novak
Division of Social Studies	Dr. John A. Decker
Administrative Vice-President	Gordon P. Freese
Director of Development	Robert A. Jones
Dean of Students	Martha A. Biehle
Dean of Religion	Dr. T. William Hall
Director of Admissions	Harry C. Biser
Director of Educational Development	Ralph C. Leyden
Business Manager	Harry E. Burge
Director of Audio-Visual Services	Neal Balanoff
Director of Information	Alice Weck

Appendix II

Personnel for Stephens College

Charles F. Madden, Academic Coordinator,

1963-64 Telephone Lecture Project, Stephens College

Head of the Department of English (creative writing, journalism, speech, and English), Mr. Madden has been on the Stephens faculty since 1949. Before becoming head of the English Department, he was coordinator of the House Plan at Stephens, a program developing the residence hall as a learning area.

He has also participated in the development of other experimental programs at Stephens, having been instrumental in evolving the College's creative writing program within the English Department and directing the interdisciplinary closed-circuit television courses required of all entering students at Stephens called Ideas and Living Today.

Recently he was a member of the Danforth Workshop which developed plans for the newly inaugurated Bachelor of Arts degree program at Stephens and has worked closely with the Student Residence Programs Commission of the American College Personnel Association.

Mr. Madden holds a Bachelor of Arts degree from West Virginia Wesleyan College and a Master of Arts degree from the University of Michigan. Prior to his appointment to the Stephens faculty, he taught at the University of Michigan and the University of Missouri.

His long poem, Bent Blue, was published in book form in 1950 after winning the Avery Hopwood Award in Poetry at the University of Michigan. He has published poetry in such magazines as Sewanee Review, Southwest Review, Northwest Review, and Michigan Quarterly and has frequently written book reivews and special articles for the St. Louis Post-Dispatch.

An hour-long tape of Mr. Madden reading a series of his most recent poems has been made a part of the poetry collection of the Lamont Library of Harvard College, Cambridge, Mass.

James Burkhart, Technical Director,
1963-64, Telephone Lecture Project, Stephens College

Mr. Burkhart, a member of the Social Studies faculty at Stephens College since 1944, teaches Contemporary Social Issues and American Government. It was in his government course that he initiated, in 1958, the series of telephone lectures that led to the present eleven college network.

Holding Bachelor of Arts and Master of Arts degrees from the University of Texas, Mr. Burkhart taught there and at the State College of Washington before his appointment at Stephens. He has held summer teaching appointments at several colleges, including Indiana State College at Indiana, Pa., Wayne State University, and Texas A & M College.

Mr. Burkhart is co-author of an American Government textbook, Guide to American Government. He is also co-editor of a series of books published over a period of years including Contemporary Social Issues, and Modern Society and American Government: The Clash of Issues.

Mr. Burkhart developed a study manual, American Government I, for the United States Armed Forces Institute and has written articles for such opinion journals as Nation, Progressive, and Frontier, popular periodicals such as Farm Quarterly and Science Digest as well as for professional and literary publications such as Wisconsin Magazine of History and Antioch Review.

In 1960 he was elected a Fellow of the International Institute of Arts and Letters in Zurich, Switzerland.

Inspired by a debate on the Stephens College campus in 1960 with Fulton Lewis, Jr., Mr. Burkhart had held a running discussion with Mr. Lewis which, in 1963-64, grew into a national tour on national and international issues.

Master Teachers, 1963-64

Dr. Harry T. Moore, Master Teacher: "American Life as Seen by Contemporary Writers."

Author-critic Harry T. Moore is a Southern Illinois University Research Professor of English who is considered to be one of the nation's leading authorities on the life and works of D. H. Lawrence.

He serves as a consultant on modern literature to both SIU's Morris Library and the Southern Illinois University Press, and is editor-in-chief of a series of books now in progress (Cross Currents/Modern Critiques) about modern literary figures.

Well-known for his popular biography of Lawrence, The Intelligent Heart, he has also edited the letters of Lawrence in two volumes. Among his publications are The World of Lawrence Durrell, The Novels of John Steinbeck, and three other books on Lawrence. He is presently at work on a book to be called Twentieth Century European Literature. In addition, he is a contributor to such publications as The New York Times Book Review, The Saturday Review, Poetry Magazine, the New Republic, and The Atlantic.

A graduate of the University of Chicago, Dr. Moore has also studied at Northwestern University and received his doctorate from Boston University. He served in the Army Air Force during World War II and continues to serve in the Air Force reserve.

Before his appointment at SIU in 1957, he taught at Illinois Institute of Technology, Northwestern University, the Babson Institute, Columbia University, the University of Chicago, and New York University. In 1958 and 1960 he was a Guggenheim Fellow and has been named a Fellow of the Royal Society of Literature.

Dr. Marjorie Carpenter, Master Teacher: "Great Issues in Contemporary Society."

A member of the Stephens College Humanities faculty, Dr. Carpenter is nationally recognized as a speaker, consultant, and educator.

She "stepped down" from her post as chairman of the Humanities Division at Stephens in 1961, to return to her first love of teaching, after serving in that capacity and as Administrative Dean for many years.

In 1962, Dr. Carpenter received two recognitions for her outstanding teaching: in November she was selected from faculty members in colleges and universities across the nation to be featured by the ABC-TV and radio networks on the half-hour National Education Association program "Meet theProfessor"; in December, she was presented a Citation of Merit by the University of Missouri during its Arts and Science Week for "her outstanding achievements in scholarship, teaching, educational administration, and community service." Since 1963 she has served on the Missouri Governor's Committee on the Arts.

Dr. Carpenter is editor and co-author of The Larger Learning and is widely published in magazines and books in the field of Humanities. In 1960 she was a leader in the Danforth Foundations's Seminar on Value Perspectives; and in 1959 was on the staff of its seminar for college teachers.

She holds Bachelor of Arts, Bachelor of Science in Education, and Master of Arts degrees from the University of Missouri and a doctorate from Radcliffe where she was awarded a fellowship for her research on Byzantine Greek. She has also done graduate study in Athens, Greece, and served as professor of classics and fine arts at McMaster University in Canada.

At Stephens she developed, under a grant from the Ford Foundation's Fund for Adult Education, an adult program in the Humanities for use by community study groups, which has been sent throughout the nation and overseas. During World War II she was consultant on higher education in Germany, under the

United States High Commissioner for Germany. She is a former vice-president of the National Association for Higher Education.

Dr. Alfred Novak, Master Teacher: Seminar on "Improvement of Science Teaching."

Chairman of the Division of Sciences and Mathematics at Stephens College since 1961, Dr. Novak was formerly consultant to the American Institute of Biological Science Curriculum Study at Boulder, Colorado.

Prior to that Dr. Novak had a wide range of teaching experience. He taught biology in Chicago high schools, was an instructor in the Army Air Force, and was professor of biology and natural sciences at Michigan State University. He has also been a biology lecturer at the Oak Ridge Institute of Nuclear Studies.

A native of Chicago, Dr. Novak received a Bachelor of Science degree in zoology and a Master of Science in endocrinology from the University of Chicago. He received a master's degree in education from Chicago Teachers College and a doctorate in physiology and pharmacology from Michigan State University.

In 1946, Dr. Novak discovered a cure for Mumps Orchitie; from 1950 to 1951 he served as a special cancer research fellow at the California Institute of Technology; and in 1957-58 was a Guggenheim Fellow at the University of Cambridge, England.

He has co-edited three volumes of studies in natural science, published by the Michigan State University Press, and has written a natural science telecourse used there. Currently the advisory editor in biology and zoology for the *Encyclopedia Americana,* he is the author of numerous articles published in it.

While serving as consultant to the American Institute of Biological Sciences Curriculum Study, he was active in the production of 32 volumes of texts and laboratory and teacher guides. Since 1961 he has been a guest lecturer at high schools and colleges across the nation in the AIBS program sponsored jointly by the National Science Foundation and the Atomic Energy Commission.

Appendix III

Amplified Telephone Personnel, Participating Institutions, 1963-64

Drury College, Springfield, Missouri: Dr. Edmund McCurtain, coordinator and technical director; Dr. S. D. Larson, teacher, Science Seminar; Dr. James T. Livingston, teacher, Contemporary Writers.

Grambling College, Grambling, Louisiana: Dr. William McIntosh, coordinator; Roy Moss, technical director; W. A. McCree, teacher, Great Issues.

Jackson State College, Jackson, Mississippi: Dr. R. H. Jefferson, coordinator and teacher, Contemporary Writers; Gene Mosley, technical director.

Kansas Wesleyan College, Salina, Kansas: Thomas Durkin, coordinator and teacher, Great Issues; Paul Stucky, technical director; Charles Creager, teacher, Science Seminar.

Langston University, Langston, Oklahoma: Walter Mason, coordinator; Achille Hebert, technical director; James A. Simpson, teacher, Science Seminar; Mrs. Moxye W. King, teacher, Contemporary Writers.

LeMoyne College, Memphis, Tennessee: Dr. Charles Phillips, coordinator; Dr. W. W. Gibson, teacher, Science Seminar; Dr. Clifton H. Johnson, teacher, Great Issues.

Morehouse College, Atlanta, Georgia: Dr. Tobe Johnson, coordinator; Waldo Emerson Whatley, technical director; Dr. H. S. McBay, teacher, Science Seminar; Finley Campbell, teacher, Contemporary Writers.

Stephens College: Charles F. Madden, coordinator and teacher, Contemporary Writers; Oral Kuehn and John Ingwersen, audio-visual and technical assistants; Dr. Alfred Novak, teacher, Science Seminar; Dr. Marjorie Carpenter, master teacher, Great Issues; Miss Elizabeth Barnes, teacher, Great Issues.

Southern University, Baton Rouge, Louisiana: Dr. Huel D. Perkins, coordinator; Dr. Henry E. Cobb, teacher, Great Issues.

Tougaloo Southern Christian College, Tougaloo, Mississippi: Dr. Naomi Townsend, coordinator; William Townsend, technical director; Dr. Elizabeth Sewell, teacher, Contemporary Writers.

Wilberforce University, Wilberforce, Ohio: Dr. Deckard Ritter, coordinator; Mrs. W. B. Rajanna, technical director; E. L. Harris, teacher, Science Seminar; James Davis, teacher, Great Issues.

Appendix IV

Long-distance Guest Lecturers for the 1963-64 Science Seminar

October 1, 1963	Dr. John G. Kemeny, chairman of the Mathematics Department and professor of Philosophy, Dartmouth College, Hanover, New Hampshire. Subject: "The Role of Mathematics in Science," from Hanover, New Hampshire.
October 8, 1963	Dr. Joseph J. Schwab, Professor of Natural Sciences and Education, University of Chicago. Subject: "Scientific Inquiry," from Chicago.
October 15, 1963	Dr. Earl A. Evans, Jr., Professor and Chairman of Department of Biochemistry, University of Chicago. Subject: "How Life Began," from Chicago.
October 22, 1963	Dr. Alfred Novak, Chairman of Division of Sciences and Mathematics, Stephens College, Columbia, Missouri. Subject: "Problems of Multicelluarity," from Columbia, Missouri.
October 29, 1963	Dr. Irwin Sizer, Professor and Head of Department of Biochemistry, Massachusetts Institute of Technology. Subject: "Protein Architecture--Enzymatic Systems," from Cambridge, Massachusetts.
November 5, 1963	Dr. Herbert Goldberg, Professor of Microbiology, University of Missouri, Columbia, Missouri. Subject: "Competitive Molecules--Antimetabolites," from Columbia, Missouri.
November19, 1963	Dr. Harry Sisler, Head of Department of Chemistry, University of Florida, Gainesville, Florida. Subject: "Chemical Bonds and Organic Molecules," from Gainesville, Florida.
November 26, 1963	Dr. George Wells Beadle, President, Trustee, and Professor of Biology in the Division of the Biological Sciences and the College of the University of Chicago. Subject: "The Molecular Basis of Heredity," from Chicago.
December 3, 1963	Dr. James Bonner, Professor of Biology, California Institute of Technology. Subject: "Life--the Ballet of the Big Molecules," from Merchantsville, New Jersey.
December 10, 1963	Dr. Philip Siekevitz, Associate Professor, Department of Cytology, Rockefeller Institute, New York City. Subject: "Cellular Dynamics," from New York City.

January 7, 1964	Dr. Hermann Muller, Professor, Department of Zoology, University of Indiana, Bloomington, Indiana. Subject: "Genetic Aberrations," from Bloomington, Indiana.
January 14, 1964	Dr. Alfred Novak, Stephens College, Review and Evaluation.
February 4, 1964	Dr. Peter B. Medawar, Director, National Institute of Medical Research, London, England. Subject: "The Future of Man," from London, England.

Appendix V

Sample: Amplified Telephone Schedule and Structured Discussion Outline

Session 11

January 7, 1964
7:30 p.m. CST

STEPHENS COLLEGE SCIENCE SEMINAR

A Telephone-lecture Course

TIME SCHEDULE

6:55 p.m. CST All colleges connected in conference call; warm-up conversation.

7:05 p.m. Introduction of subject and speaker Dr. Alfred Novak.

7:10 p.m. Dr. Hermann Muller
University of Indiana

"Genetic Aberrations"

7:30 p.m. (a) Structured discussion of Dr. Muller's presentation. Questions will be accepted from participants in the Seminar by calling on the institutional centers in the following order:

(1) Stephens College, Columbia, Missouri
(2) Morehouse College, Atlanta, Georgia
(3) LeMoyne College, Memphis, Tennessee
(4) Langston University, Langston, Oklahoma
(5) Drury College, Springfield, Missouri
(6) Wilberforce University, Wilberforce, Ohio
(7) Kansas Wesleyan University, Salina, Kansas

(b) Free discussion among participating institutions

(c) Summary by Dr. Novak

8:15 p.m. Sign-off.

Appendix VI

Long-distance Telephone Lecture Guests for 1963-64 "Great Issues in Contemporary Society"

February 3, 1964	Dr. Margaret Mead, Curator of Ethnology, American Museum of Natural History, Adjunct Professor of Anthropology, Columbia University, New York City. Subject: "What is a Culture?", from New York City.
February 12, 1964	A. H. Raskin, member of the Editorial Board, New York *Times*, specializing in labor and national affairs. Subject: "Labor's Problems," from New York City.
February 19, 1964	Carey McWilliams, editor of *The Nation*, speaker, and author. Subject: "Automation," from New York City.
February 26, 1964	Adolf Berle, attorney, lecturer, and author, former Ambassador to Brazil and special assistant to Secretary of State, chairman of President Kennedy's Task Force on Latin American Policy. Subject: "Responsibility of Free Enterprise," from New York City.
March 4, 1964	Dr. Marston Bates, Professor of Zoology, University of Michigan, Ann Arbor, Michigan. Subject: "Expanding Population and Shrinking World," from Ann Arbor.
March 11, 1964	Ralph McGill, Publisher of the *Atlanta Constitution.* Subject: "Civil Rights," from Atlanta.
April 3, 1964	John Kenneth Galbraith, Professor of Economics at Harvard University and former ambassador to India. Subject: "Politics of Privation," from Cambridge, Mass.
April 8, 1964	Dr. Henry Steele Commager, historian, professor in Department of American Studies, Amherst College, Amherst, Massachusetts. Subject: "States Rights," from Amherst.
April 22, 1964	Dr. Huston Smith, philosopher, professor at Massachusetts Institute of Technology, Cambridge, Massachusetts. Subject: "Ethical Relativism," from Cambridge.
April 29, 1964	Ralph Bunche, Nobel Peace Prize Winner and United Nations Under-Secretary of Special Political Affairs. Subject: "U.N., 1964," from New York City.
May 6, 1964	Max Lerner, author, columnist, lecturer, Professor of American Civilization at Brandeis University, Waltham, Massachusetts. Subject: "The Age of Overkill," from Waltham.

May 8, 1964	David Riesman, author and Professor of Social Science at Harvard University, Cambridge, Massachusetts. Subject: "Education Versus Life," from Cambridge.
May 13, 1964	Glenn Seaborg, co-winner of Nobel Prize in Chemistry and Chairman of the U. S. Atomic Energy Commission. Subject: "Atomic Energy in the World," from Washington, D.C.
May 20, 1964	Barbara Ward (Lady Jackson), political and economic writer, visiting professor at Harvard University, Cambridge, Massachusetts, and former editor of the London Economist. Subject: "The Politics of Affluence," from London.

Appendix VII

Long-distance Telephone Lecture Guests for 1963-64 "American Life as Seen by Contemporary Writers."

February 3, 1964	John Dos Passos, author of *Mid-Century*, *Most Likely to Succeed*, and the trilogy *U.S.A.* Subject: "*Mid-Century*," from Baltimore.
February 10, 1964	Horace Gregory, poet, critic, editor of *The Portable Sherwood Anderson*. Subject: "The Works of Sherwood Anderson," from Rockland County, New York.
February 17, 1964	Arthur Mizener, Professor of English at Cornell University, Ithaca, New York. Subject: "F. Scott Fitzgerald and *Tender is the Night*," from Ithaca.
February 24, 1964	Carvel Collins, literary critic, Professor of English at Massachusetts Institute of Technology, Cambridge, Massachusetts. Subject: "William Faulkner," from Cambridge.
March 2, 1964	Warren Beck, critic of contemporary literature and professor at Lawrence College, Appleton, Wisconsin. Subject: "John Steinbeck," from Appleton.
March 9, 1964	Carlos Baker, critic, author, poet, and Woodrow Wilson Professor of English at Princeton University. Princeton, New Jersey. Subject: "Ernest Hemingway," from Princeton.
March 16, 1964	Ralph W. Ellison, author, winner of National Book Award, and visiting professor at Rutgers University, New Brunswick, New Jersey. Subject: his *The Invisible Man*, from New Brunswick.
March 23, 1964	James T. Farrell, author. Subject: his book, the third volume of *Studs Lonigan*, *Judgment Day*, from New York City.
April 6, 1964	Karl Shapiro, poet, editor of literary magazine *Prairie Schooner*, professor of English at University of Nebraska, Lincoln, Nebraska. Subject: his poetry, from Lincoln.
April 10, 1964	Muriel Rukeyser, poet, and poet-in-residence at Sarah Lawrence College, Bronxville, New York. Subject: her poetry, from New York City.
April 13, 1964	Anne Sexton, poet, author of two volumes. Subject: her poetry, from Newton Lower Falls, Mass.

April 17, 1964	Richard Wilbur, poet, professor at Connecticut Wesleyan College, Portland, Connecticut. Subject: his works, from Portland.
April 20, 1964	John Malcolm Brinnin, poet, critic, professor at University of Connecticut, Storrs, Connecticut. Subject: his works, from Cambridge, Mass.
April 27, 1964	Vance Bourjaily, novelist, professor at University of Iowa, Iowa City, Iowa. Subject: his book, *The End of My Life*, from Mexico, where engaged in an archaeological expedition.
May 5, 1964	Saul Bellow, author. Subject: his book, *Henderson, The Rain King*, from Chicago.
May 11, 1964	Kay Boyle, writer-in-residence, San Francisco State Teachers College. Subject: her volume of *Thirty Stories*, from San Francisco.
May 18, 1964	John Updike, author. Subject: his book *Rabbit, Run*, from Ipswich, Mass.

Appendix VIII

A Representative List of Interviewees: 1959-60 four-course experiment at Stephens College under U.S. Department of Health, Education, and Welfare Grant. (Position indicated is the one held at the time of the telephone interview.)

W. Richard Poirier	Professor at Harvard University, authority on Henry James.
Richard Ellman	Professor at Northwestern University, authority on James Joyce, author of books on Yeats and Joyce.
John Malcolm Brinnin	Professor at University of Connecticut, poet, and biographer of Dylan Thomas and Gertrude Stein.
John Ciardi	Poetry Editor, *Saturday Review of Literature*, poet, and translator.
John Hollander	Professor at Yale University, author, and editor.
William Arrowsmith	Professor at University of Texas, Rhodes Scholar, Guggenheim Fellow, editor, and translator.
Budd Schulberg	Novelist, playwright, critic.
Katherine Anne Porter	Novelist and short story writer.
Jean Stafford	Novelist and short story writer.
A. J. Leibling	Author and member of the *New Yorker* staff.
Charles H. Percy	President, Bell and Howell, platform chairman, Republican National Convention.
Thruston Morton	Senator from Kentucky, chairman, Republican National Committee.
Chester Bowles	Congressman from Connecticut, platform chairman, Democratic National Convention.
Kenneth Hechler	Congressman from West Virginia.
Mark O. Hatfield	Governor of Oregon.
Edmund Brown	Governor of California.
G. Mennen Williams	Governor of Michigan.
Orval Faubus	Governor of Arkansas.
David Lawrence	Governor of Pennsylvania.
Wilson Wyatt	Lieutenant-Governor of Kentucky.

M. E. Spaght	Vice-president, Shell Oil Company
Mrs. Claire Williams	Republican National Committeewoman from Florida.
Barry Goldwater	Senator from Arizona.
Stephen K. Bailey	Professor in Department of Political Science, Cornell University.
James L. McCamy	Professor in Department of Political Science, University of Wisconsin.
Sidney Hyman	Correspondent, Washington *Post*.
Bill Redmon	MFA Mutual Insurance Company, personnel division, Columbia, Missouri.
John Thompson	President, Missouri State Chamber of Commerce, Jefferson City, Missouri.
Carl Marrow	Missouri Power and Light Company, Jefferson City, Missouri.
Mrs. Alice K. Leopold	Assistant to the Secretary of Labor, U.S. Department of Labor, Washington, D.C.
Dudley Sheppard	Fresno, California, insurance executive.
Dexter Keezer	Vice-president and Director of Economics Department, McGraw-Hill Publishing Company, New York City.
George Romney	President, American Motors Corporation, Detroit, Michigan.
Lawrence R. Kahn	A. G. Becker and Company (stock market and investments), New York City.
Josee Powell	Assistant Secretary and Director of Personnel, Missouri Farm Bureau Federation, Jefferson City, Missouri.
Erwin D. Canham	Editor, *Christian Science Monitor*, President, U.S. Chamber of Commerce, Boston, Massachusetts.
John Furbay	Director, Air World Education, Trans-World Airlines, New York City.
Don Gowen	Director of Public Relations, Oak Ridge National Laboratories, Oak Ridge, Tennessee
Mrs. Mary Roebling	President, Trenton Trust Company, Trenton, New Jersey, Board of Directors of American Stock Exchange.
Miss Margaret Divver	Second Vice-president, John Hancock Mutual Life Insurance Company, Boston, Massachusetts.

Gano Chance	Chairman of the Board, A. B. Chance Company, Centralia, Missouri.
Dr. Sylvia A. Sorkin	Business Consultant, St. Louis, Missouri.
Kenneth Newland	Curator, National Air Museum, Smithsonian Institute, Washington, D.C.
Mrs. Margaret Hickey	Public Affairs Editor, *Ladies Home Journal*, Philadelphia, Pennsylvania.
R. Alexander Callandra	Professor of Physics, Washington University, St. Louis, Missouri.
Rev. John Erwin Naus	Professor of Philosophy, St. Louis University, St. Louis, Missouri.
Rabbi Abraham Pimontel	Director, Hillel Foundation, Columbia, Missouri

Three-way Interview

Dr. Jaroslav Pelikan	Professor of Historical Theology, University of Chicago.
Father Walter Ong, D.J.	Professor, St. Louis University, St. Louis, Missouri.
Dr. Lewis Spitz	Professor, University of Missouri, Columbia, Missouri.

Part Two

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Science Seminar ....*page 68*
Person to Person Teaching, reprinted from the Saturday Review

A member of the Stephens Faculty, Miss Henriette Ricou, participates in telelecture series from the Stephens campus.

The complete syllabus for each of the three courses is included only in the full report, which is available at the offices of The Fund for the Advancement of Education or at Stephens College, Office of the Director of Educational Development.

Appendix IX

A Sample List and Summary of Toll Charges

Amplified Telephone Project, 1963-64
Stephens College, Columbia, Missouri

Date	Speaker	Subject	Stations	Time	Cost
SCIENCE SEMINAR					
10/8/63	Joseph J. Schwab Chicago, Ill.	Scientific Inquiry	8*	66 m.	$ 136.50
10/29/63	Irwin Sizer Cambridge, Mass.	Protein Architecture	8	79 m.	223.00
11/19/63	Harry Sisler Gainesville, Fla.	Chemical Bonds & Organic Molecules	8	79 m.	162.50
12/3/63	James Bonner Merchantsville, N.J.	Nuclear Organization	8	68 m.	175.00
2/4/64	Peter Medawar London, England	The Future of Man	8	50 m.	450.00
Total toll charges for the Science Seminar Series					$2,315.75
GREAT ISSUES IN CONTEMPORARY SOCIETY					
4/8/64	Henry S. Commager Amherst, Mass.	States Rights	7	51 m.	132.50
4/15/64	Adrienne Koch Berkeley, Calif.	American Philosophy in a Time of Crisis	7	39 m.	122.50
4/29/64	Ralph Bunche New York, N.Y.	U. N. 1964	7	43 m.	112.50
5/13/64	Glenn Seaborg Washington, D.C.	Atomic Energy in the World	6	43 m.	79.25
5/20/64	Barbara Ward London, England	The Politics of Affluence	7	42 m.	378.00
Total toll charges for the Great Issues Series					$2,668.25

*This refers to the number of locations connected together in a conference network. There is some variation in the number when the guest speaker is located at one of the institutions.

Date	Speaker	Subject	Stations	Time	Cost
AMERICAN LIFE AS SEEN BY CONTEMPORARY WRITERS					
4/8/64	Karl Shapiro Northfield, Minn.	His own poetry	8	47 m.	$ 122.50
4/17/64	Richard Wilbur Portland, Connecticut	His own poetry	8	51 m.	132.50
4/24/64	Harry T. Moore Carterville, Ill.	Vance Bourjaily	7	51 m.	106.50
5/11/64	Kay Boyle Mill Valley, Calif.	*Thirty Stories*	8	49 m.	166.00
5/18/64	John Updike Ipswich, Mass.	*Rabbit*, *Run*	8	47 m.	146.50
Total toll charges for the American Life Series					$3,883.10

Appendix X

SCIENCE SEMINAR

Participating Institution	Other Institutions Represented
Morehouse College Atlanta, Georgia	Atlanta University Clark College Morris Brown College Spelman College
Drury College Springfield, Missouri	Southwest Missouri State College Springfield Public Schools Evangel College Parkview High School Hillcrest High School
Kansas Wesleyan University Salina, Kansas	Bethany College Bethel College Kansas State University Salina High School Ellinwood High School College of Emporia Marymount College Sterling College
LeMoyne College Memphis, Tennessee	Melrose High School Woodstock County Training School Owens College Ferd Road School Father Bertram School Geeter High School Mt. Pisgah High School Carver High School Barretts Chapel High School Shelby County Training School Porter High School St. Jude's Research Hospital
Wilberforce University Wilberforce, Ohio	Central State College Rio Grande College U. S. Air Force Institute of Technology Antioch College Cederville College Wilmington College Capitol University

Science Seminar cont'd.

Participating Institution	Other Institutions Represented
Langston University Langston, Oklahoma	Oklahoma State University Oklahoma Baptist University Moon Junior High School Douglass High School
Stephens College Columbia, Missouri	Christian College Westminster College University of Missouri Lincoln University William Woods College Central Methodist College Jefferson City High School Hickman High School

Saturday Review

PERSON-TO-PERSON TEACHING

By CHARLES F. MADDEN

By CHARLES F. MADDEN, *poet, teacher, and coordinator of the Amplified Telephone Project at Stephens College, Columbia, Missouri.*

IT HAS become a cliché in academic circles to refer to the ideal university in terms of Mark Hopkins's log, and often the idealists with great specificity require a Renaissance man schooled in the Socratic method at one end and a curious, receptive student at the other.

But the university realist, clutching the latest population statistics in one hand and legislative appropriations or figures from the development office in the other, knows that the log is outmoded as a site for intellectual encounter and the one-to-one ratio is purest fantasy. He is apt to point out that the "Renaissance man" is an anachronism, and "receptive student" a euphemism for a diploma-hungry, scholarship-seeking junior pedant. He is wrong, of course, on all points.

Though a long distance telephone line provides a strange analog, Mark Hopkins would, I think, agree that the newest use of this technological aid comes very close to establishing the kind of dialogue he admired. It is now possible—and more than possible, a fact—that students are being provoked to awareness and stimulated to activity by person-to-person conversations with major spokesmen from the fields of art, politics, philosophy, science, and letters.

Into the classroom furnished with special telephone equipment, two amplifiers and two microphones with cords long enough to reach to every student, comes the voice of John Dos Passos. He says, "At that time (around World War I) I was particularly interested in the work of the Italian Futurists and the French poet, Rimbaud. A number of poets were experimenting in the use of language very much the same way that the cubist painters were experimenting with form and color. They were trying to produce something that stood up off the page. Some of them called it simultaneity." And a student who has read *Midcentury* and wondered about the genesis of Dos Passos's style is answered.

Or Margaret Mead, in New York, answering a question asked directly, person-to-person, by a student at Le Moyne College in Memphis, Tennessee, says that anthropologists are better equipped to enter into the lives of primitive peoples than the primitive peoples are to understand the anthropologists. She illustrates her point with personal examples unavailable in any source other than a two-way conversation.

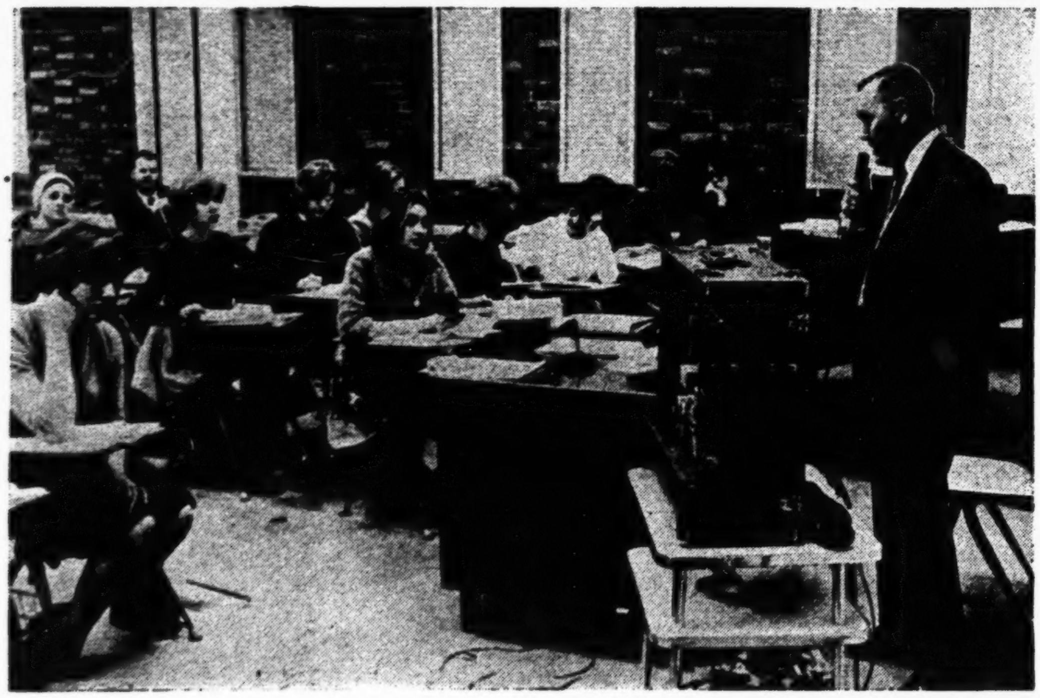
In such a classroom the students often gasp audibly when they hear information or opinions directly from recognized authority. There was such a gasp, and an electric interest, when a group of science teachers heard Nobel Prize-winning geneticist Hermann Muller disclaim the use of his name in a spurious publication on genetics and the race problem. The group addressed was part of a science seminar being conducted by amplified telephone. The knowledge and insight of Dr. Muller (and twelve other scientists of national and international reputation) was thus put at the disposal of teachers who might fear the rapid growth of scientific information and the effect that their inadequate knowledge would have on their teaching.

For the Renaissance man whose knowledge embraced all fields we have substituted specialists, but the classroom teacher now has resources that give him access to more knowledge than the Renaissance man could have dreamed of. To avail himself of these resources he has only to use his imagination and the technology available to him.

In Jackson, Mississippi, last spring a wonderfully enthusiastic teacher at Jackson State College, Dr. Jane Ellen McAllister, sensing an opportunity to improve the cultural level of the essentially deprived young Negroes with whom she worked, eagerly set up a series of amplified telephone lectures by Columbia University's distinguished professor of classics, Moses Hadas, speaking from New York, on The Great Ideas of Antiquity. During a five-week summer session, students of many ages—especially selected high school students, regularly enrolled college students, and teachers—gathered in an auditorium at Jackson and in classrooms at Tougaloo Southern Christian College, Grambling College, and Southern University in rapt attention as Dr. Hadas led them through the tragedies set down by Sophocles and Aeschylus centuries ago. And in the students, though they heard Oedipus and Antigone and Creon from afar off, there was renewed the feeling that human suffering and human dignity know no particular century and leave no people untouched.

The idea of enriching college courses by telephone interviews is not a particularly recent one. For more than six years Professor James Burkhart of Stephens College has lifted political and social issues off the printed page and brought them as living conflicts into his course in American Government. Students for whom a political convention was little more than a week of exciting television talked with the national chairmen of the political parties, studied the platforms, interviewed candidates, and came to know, finally, the vitality of the American two-party system and the responsibility of the individual citizen.

But enrichment is only one dimension of the possibilities opened by the use of the telephone in education. With the conference technique—a familiar part of the business world but new in universities—colleges can share their faculties without straining their facilities. A pamphlet issued by the Bell Telephone Company details the remarkable extent to which tele-lecture has moved into our schools. "Dr. John R. Coleman, Professor of Economics at the Carnegie Institute of Technology,



STEPHENS COLLEGE- MARVIN KREISMAN

"Teaching involves more than turning on the equipment and listening."

gave a tele-lecture from Pittsburgh to audiences at the Universities of Oklahoma, Syracuse, Wisconsin, Omaha, and Washington," the pamphlet reports. A course in industrial psychology taught by Dr. William E. Jaynes was offered simultaneously to a class at Omaha, Dr. Jaynes's home base, and a class on the campus of the University of Colorado. In reciprocity Dr. Keith Davis of Colorado taught a class in social psychology that was received by telephone classes at Omaha. This was, in effect, an exchange program in which neither professor left home except for brief visits to their "long distance" classrooms.

Other professors, experts in their fields, may be drawn by telephone into a university class for a single session or several sessions when it would otherwise be impossible for them to be absent from their regular duties. The State College in La Crosse, Wisconsin, thus tapped the resources of the University of Wisconsin when Dr. Max Carbon, Professor of Mechanical Engineering, spoke to them from Madison on "The Nuclear Reactor: Its Functions and Purpose." Dr. Albert Marckwardt of the University of Michigan, Dr. Oliver Chitwood of the University of West Virginia, and Dr. Neil Miller of Yale University were "guest lecturers" to groups outside their universities by using the telephone.

During the past year, at Stephens College, in Columbia, Missouri, the use of amplified telephone conversations as part of the regular instructional program has been tried and proved. The experiment involved not only the program of a single college but the first major effort at inter-institutional cooperation in instruction by telephone. Three courses emanating from Stephens were made available to the students at ten other institutions by using regular telephone facilities in a conference hook-up.

The science seminar met each week of the first semester under the direction of Dr. Alfred Novak, chairman of the Division of Science and Mathematics at Stephens College. The speakers chosen by Dr. Novak were asked to talk for thirty or forty minutes on the topic assigned to them and then, for another thirty to forty-five minutes, the participants were free to ask questions just as if the speaker were in the room. Dr. Novak acted as moderator.

Questions might come from any of the seven schools involved: Morehouse College in Atlanta, Georgia; Wilberforce University in Wilberforce, Ohio; Le Moyne College in Memphis, Tennessee; Drury College in Springfield, Missouri; Stephens College, Columbia, Missouri; Langston University in Langston, Oklahoma; or Kansas Wesleyan University in Salina, Kansas. The questions might, however, come not only from the faculty of these schools but from any of their guests, and evaluations show that the seminar actually reached representatives of over forty institutions.

The equipment for the experiment was developed in the Bell Laboratories and leased to each school by the Bell Telephone system. The installation charges and cost of leasing were minimal when compared with the prohibitive cost and nearly impossible logistics of bringing the speakers to the campuses involved. The equipment is simple but it provides that crucial element missing in television and radio, an immediate feedback, a two-way system of communication.

Mike Beilis from the marketing division of AT&T, himself once a teacher at the University of Omaha and involved there with the early experimentation, has moved into the telephone industry to help in the promotion of the telephone for educational purposes. He has been continuously interested in the development of the Stephens project, commenting that the programing in this experiment should serve as a prototype for other institutions that want to draw on the "brain power bank."

However, programing has involved more than arranging for guest speakers. Teaching involves more than turning on the equipment and listening. For each of the sessions in the three experimental courses the students are expected to do the usual amount of preparation necessary for a college course. Each student is provided with a bibliography of relevant materials, and biographical data on the guest lecturers.

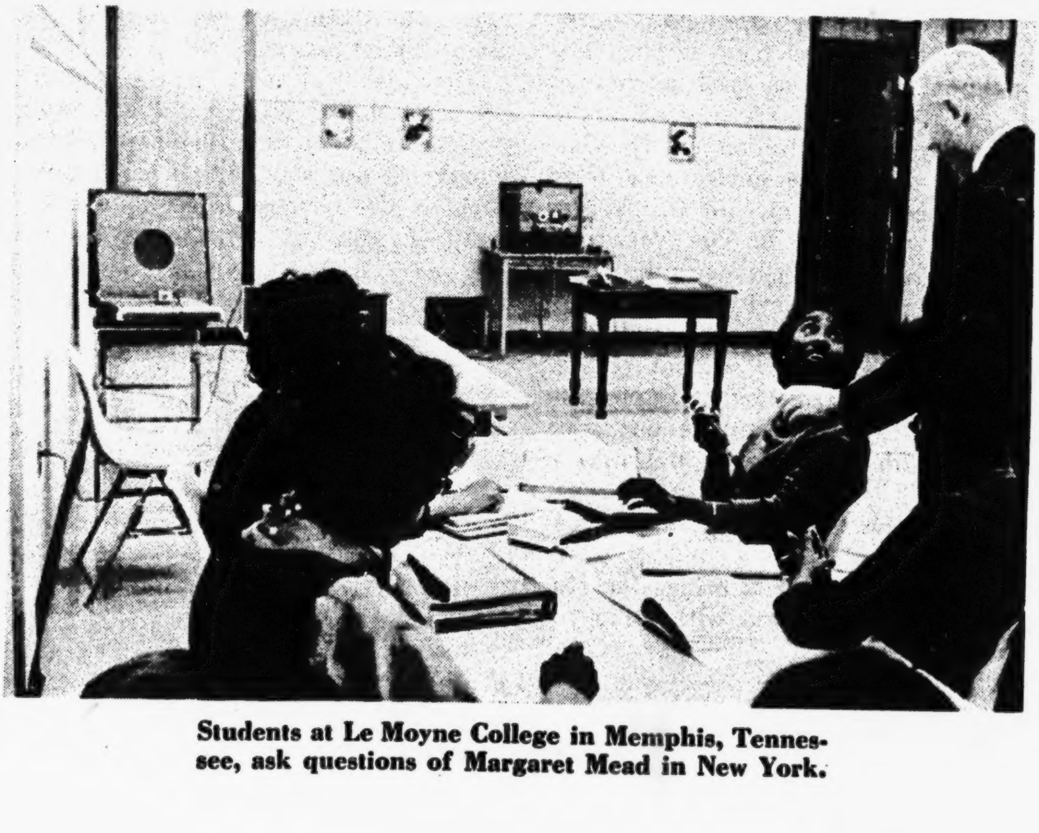
In the science seminar, in particular, the lecturers often provided visual materials that were reproduced as slides for projection during the lectures. Dr. Philip Siekevitz used nineteen slides of the latest electronic photomicrographs taken at Rockefeller Institute by Drs. Polade and Porter. For many of those listening and watching, this was the first view of these most recent photographs. The slides have now become a part of each institution's collection and with Dr. Siekevitz's lecture will give new impetus and excitement to instruction in cellular biology.

The two courses taught in the second semester offer still further variations in instructional method and additional problems in programing. An interdisciplinary course touching social studies, philosophy, and literature and called "American Life as Seen by Contemporary Writers" is taught, by telephone, by Dr. Harry T. Moore, critic and scholar.

The course reaches six institutions: four were also involved in the science seminar and two were a part of the Hadas lecture series. Four of the six schools are predominantly Negro, for it was felt by the directors of the Fund for the Advancement of Education, who provided the grant under which this experimentation is taking place, that the telephone system might provide an opportunity for surmounting some of the problems that the Negro colleges have faced in trying to provide their students with instruction of the highest caliber.

Dr. Moore teaches the course from his home in Carterville, Illinois. He speaks to his class from his book-lined study. He wears an operator's head-set leaving his hands free to pick up a book or his notes. His presentation may be as informal as a personal visit with him would be.

He has provided a reading list for his class that surveys the finest writing in the past half century and, to enliven



Students at Le Moyne College in Memphis, Tennessee, ask questions of Margaret Mead in New York.

that reading somewhat, to make it immediate in the experience of the student, he has invited the authors themselves to visit with the classes via telephone and talk about their work. Students have listened to, and questioned, John Dos Passos, Ralph Ellison, James T. Farrell, John Updike, Kay Boyle, Saul Bellow, and Vance Bourjaily about their novels and short stories; Karl Shapiro, Muriel Rukeyser, Anne Sexton, John Malcolm Brinnin, and Richard Wilbur about their poetry; and Horace Gregory, Arthur Mizener, Carvel Collins, Warren Beck, and Carlos Baker about the novelists of an earlier time with whom they have worked as critics.

Imagine the excitement and enthusiasm engendered in students by hearing Farrell discuss what he thinks has been the comparative neglect by critics of *Judgment Day,* the third novel in his trilogy *Studs Lonigan.* Or try to estimate the effect on students, for whom Faulkner is a remote Olympian, when Carvel Collins tells how William Faulkner sat "as a listener" in the courthouse square of Oxford, Mississippi, gathering the sounds of human speech for his writing. The classroom walls and distances shrink away at moments like these and education becomes the interplay of mind on mind.

Dr. Marjorie Carpenter, the teacher of the second course being offered for credit on a regular basis, was first to use the phrase "person-to-person" teaching in describing the amplified telephone conversations. Her course, "Great Issues in Contemporary Society," is also an interdisciplinary one touching on social studies and philosophy. As one of the nation's great teachers, she is particularly aware of the need on the part of students not merely to identify issues in our contemporary world but to explore them in depth and to see that, at the root, all have implications for human values as well as human behavior.

Some feminine intuition and Dr. Carpenter's wide experience must have guided her to a choice of Carey McWilliams, the editor of *The Nation,* to speak on Automation. Few, unless they were very familiar with Mr. McWilliams's work and attitudes could have foreseen the shock to student provincialism of his statement that automation will inevitably bring a shift in our value structure, that neither capitalism nor communism will provide a proper framework for the coming shift in economic views.

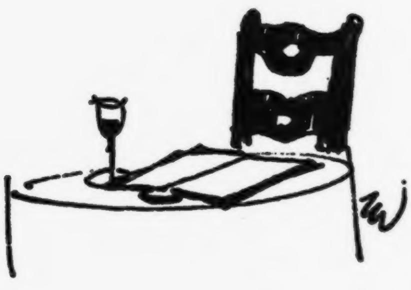
Dr. Carpenter's class brings the students into conversation with other social philosophers such as Margaret Mead, A. H. Raskin, Adolf Berle, Marston Bates, Ralph McGill, Kenneth Galbraith, Henry S. Commager, Huston Smith, Ralph Bunche, Max Lerner, David Riesman, Glenn Seaborg, Barbara Ward, and Adrienne Koch.

Although the guests in all three of these courses are drawn from the top echelons of the fields under study, most of them are able to take an hour from their busy schedules for these conversations. Vance Bourjaily spoke from Mexico, where he was involved with an archeological expedition; Dr. Abraham Maslow spoke from his bed where he was nursing a sprained back. Since the telephone guests may talk from their home or office or even a motel or airport there is but minor inconvenience for them. Many are excited by the prospect when they are initially approached and pleased with the results when the interview has been completed.

Richard Wilbur, the poet, wrote, "Teaching by amplified telephone is an attractively wild idea" and there is reason to believe that most lecturers may eventually conclude, along with Dr. Harry Sisler of the University of Florida, "that this new technique has some real possibilities in providing opportunities for widespread communication with small college campuses at relatively small cost."

COST is an item of concern, and it is not enough to say that the cost is nominal. For calls from a single classroom to a guest lecturer the cost may be under twenty-five dollars and for conference calls such as those used in the Stephens experiment an average is $150. The most expensive call was a conversation in the science series with Dr. Peter Medawar in London; the toll was $450 for the hour-long dialogue between the distinguished geneticist and seven liberal arts colleges.

The technical side of the present project is being given careful scrutiny by engineers and representatives of the telephone industry. Local companies, such as the General Telephone Company of Missouri, which has worked with Stephens, have been interested and cooperative. Further refinement of the equipment should eventually provide the kind of service that will allow a teacher to have the same confidence in this equipment that he now has in a movie projector or tape recorder. The teacher and his students are the center of the educational process and any technological aid should serve to intensify that relationship. The telephone has this potential.



The telephone has, in fact, just revealed its versatility to the educational world. From secondary schools to graduate schools imaginative teachers and administrators are surveying the possibilities.

Teachers of foreign languages and literature are experimenting with "dial-a-lesson" instruction. A number of institutions, seeking ways to reach adults in extension programs, are exploring the use of telephone networks. Educational systems, anxious to put their teachers in frequent and useful communication with their state universities, see the telephone replacing the onerous summer sessions for the accumulation of certification credits.

Alumni groups concerned either with fund-raising or simply closer ties with their alma mater are finding the telephone a more than adequate substitute for the infrequent visits by university representatives. Discussion groups gain a new liveliness when the discussions involve more than views from a single organization or when they are sparked by an introductory statement from an outstanding authority. Education broadens its scope when restrictions of time and space are removed. Such uses as those described make continuing education a possibility and today's courses give only a faint notion of the things to come.

Perhaps the greatest effect of the amplified telephone courses is in the realm of attitudes. In the present experiment there is attention, of course, on the part of all classroom teachers—each college or university has appointed a member of its faculty as classroom teacher—to the kind of information being transmitted. In courses involving students regular examinations are scheduled. But the real test will come later, perhaps years from now, and will be measured in terms of involvement and response. The young man or woman shaken from a complacent or provincial attitude by the contact with the great minds of his time may make the next step in "the bright direction." It is this sense of contact with the future that excites the participants.

REPRINTED FROM THE JULY 18, 1964 ISSUE OF SATURDAY REVIEW

"Amplified Telephone as a Teaching Medium" is one of the Stephens College Educational Reports, published 1964 by Stephens College, Columbia, Missouri.

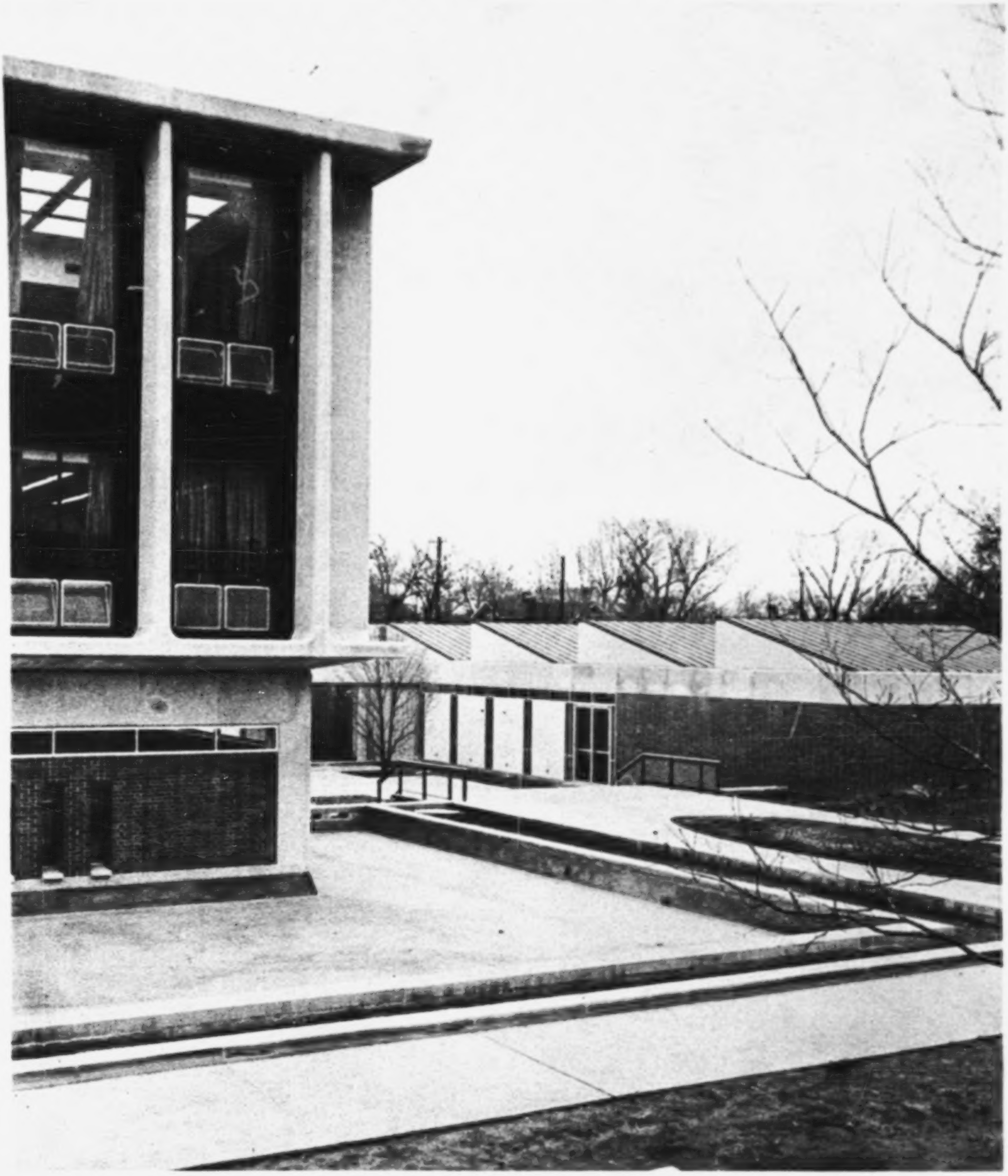
Additional copies of this report are available for $1.00 each. Checks should be made payable to Stephens College for purchasing copies.

Other educational reports currently available from Stephens College are:

"The Stephens College House Plan"	Cost: $1.00
"The Planning of Educational Media for a New Learning Center, Stephens College" (the unabridged report by Stephens to the U. S. Office of Education)	Cost: $3.50

This report produced by the Office of Information and the Office of Educational Development, Stephens College, Columbia, Missouri. Text by Joan Jolly and Charles Madden, photos by Stephens College (Marvin Kreisman), United Press International, Morton Tadder, LeMoyne College, Morehouse College, Drury College, Tougaloo College and Wilberforce University; front cover art by Thad Suits, of the Stephens College Art Faculty.

First Printing 1964.
Second Printing 1965.



The James Madison Wood Quadrangle, from which the 1963-64 Amplified Telephone Lectures emanated. Shown are library and art center, two of the five buildings in the Quadrangle.

Stephens College, Columbia, Mo.